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Northwest Ohio Manufacturing Analysis

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NORTHWEST OHIO MANUFACTURING ANALYSIS

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EXECUTIVE SUMMARY

This report presents the results of a study of manufacturing activities in Northwest Ohio (NWO). The purpose is to provide an understanding of recent trends in regional manufacturing industries in the context of longer-term trends and the national economy.

To assess the state of manufacturing in Northwest Ohio, we considered three groups of economic measures: employment and employment change, average wages (payroll per employee) and change in average wages, and concentration of an industry in NWO relative to the concentration of the same industry within the national economy. The analysis is based on the North American Industrial Classification System (NAICS).

Northwest Ohio is defined as a 17-county region composed of 11 rural counties and three metropolitan areas that encompass six counties. The metro areas include the Lima MSA (Allen County), the Sandusky MSA (Erie County), and the Toledo MSA (Fulton, Lucas, Ottawa, and Wood Counties). The rural counties include Auglaize, Defiance, Hancock, Hardin, Henry, Mercer, Paulding, Putnam, Sandusky, Van Wert, and Williams. Lucas County, home to the city of Toledo, is the most urban and populous county in NWO. For this reason, additional attention is given to Lucas County throughout the report.

MAJOR FINDINGS

Long-Term Employment Trends

- Although overall employment trends in NWO followed those of the U.S. as whole, the region grew less rapidly than the nation but lost fewer manufacturing jobs. Lucas County fared worse than the region, with slower growth in total employment and faster decline in manufacturing employment.
- From 1970 to 2005, total employment in NWO grew by 36.1 percent, slightly less than the growth rate reported across the state (38.8%) and significantly lower than the national growth rate (77.8%). In Lucas County, total employment increased 28.3 percent during this time period, a substantially slower rate of growth than in the region, state, and nation.
- NWO reported a decline in manufacturing employment of 12.9 percent between 1970 and 2005. This is significantly less than the 34.7 percent loss that occurred statewide and the 20.1 percent decline in the U.S. The experience of Lucas County was again much different than that of the region, the state, and the nation: between 1970 and 2005, the county lost more than half of its manufacturing jobs (53.8%).
- If Lucas County were excluded from the analysis, NWO would show a nine percent *gain* in manufacturing employment between 1970 and 2005. Furthermore, manufacturing employment in Lucas County continued its downward slope throughout this time period, while it began to level off in the region, state, and nation beginning in 2003.

Short-Term Employment Trends

- Between 2000 and 2005, total employment in Ohio and NWO declined four percent and 4.8 percent, respectively. Total job loss in Lucas County was slightly higher at 5.7 percent.
- Job losses in the manufacturing sector were much greater between 2000 and 2005. Ohio lost 20.5 percent of its manufacturing employment compared to 17.2 percent in NWO and 22.2 percent in Lucas County.

Northwest Ohio Manufacturing

- Fifteen of 17 counties in NWO reported a decline in both total employment and manufacturing employment between 2000 and 2005; Henry and Mercer Counties are the exceptions. Henry County showed a two percent increase in total employment and almost five percent in manufacturing. Mercer County experienced total employment growth of more than eight percent and a manufacturing job increase of 30 percent. The gain in Mercer County's manufacturing employment is due to the opening of two new production facilities and major expansions at four other facilities.
- The counties experiencing the greatest losses in total employment were Williams (-15.4%), Putnam (-12.7%), and Van Wert (-12.0%). Looking exclusively at the manufacturing sector, counties with the largest job losses were Putnam (-35.3%), Erie (-27.6%), Williams (-26.1%), Van Wert (-23.3%), and Lucas (-22.2%).
- The counties in which manufacturing accounts for the smallest share of total employment are Lucas, Allen, Ottawa, and Erie. These counties are all included in metropolitan areas and therefore have more diverse economies. The average share of manufacturing jobs in these four counties is 14.6 percent. However, two of these counties—Lucas and Allen—rank among the top five in total manufacturing jobs in NWO. The three counties that are most highly dependent on manufacturing (Fulton, Williams, and Auglaize) report an average manufacturing employment share of 41.5 percent.
- We identified large and small to medium leading and lagging industries in NWO. Large industries were those with at least 2,000 employees in both 2000 and 2005. Small to medium industries had between 250 and 1,999 employees in both 2000 and 2005. To be considered a leading or lagging industry, the industry must have reported an employment change of at least 20 percent.
    - Nine large industries were identified as leading or lagging. Eight of the industries are classified as lagging and only one industry (NAICS 3118—Bakeries and Tortilla Production) was classified leading. However, these eight industries combined accounted for more than one-third of the total NWO manufacturing employment in both 2000 and 2005. Collectively, these industries showed a net employment loss of more than 20 percent.
    - Two small to medium manufacturing industries were identified as leading, and 10 were identified as lagging. The two leading industries added a substantial number of jobs, although the precise numbers are suppressed due to confidentiality restrictions. Collectively, the 10 lagging industries reported a net employment decline of nearly 5,300 jobs between 2000 and 2005.

- A similar analysis was conducted for Lucas County. Employment levels were adjusted such that large industries were those that employed at least 400 workers in both 2000 and 2005, and small to medium industries were those that employed between 50 to 399 workers.
    - Twelve industries in Lucas County had employment levels of at least 400 in 2000 and 2005, however, only four reported an employment change of 20 percent or more. All had declining employment and, therefore, are classified as lagging industries.
    - Thirty-two manufacturing industries in Lucas County are categorized as small to medium industries; 21 experienced a change in employment of at least 20 percent. Nineteen of these industries experienced employment losses and are classified as lagging industries. Only two small to medium industries experienced employment gains of greater than 20 percent. Among the lagging industries, four industries lost at least half of their 2000 employment base by 2005. Ten other industries lost more than a quarter of their employment during this time period.
- We consider an industry to be a major exporter (wealth generator) if it has a location quotient of 2.0 or greater. In NWO, 28 manufacturing industries can be considered major exporters; five of these industries (NAICS 3369, 3256, 3362, 3111, and 3326) showed an employment increase between 2000 and 2005. Only two of these five industries reported employment levels of more than 1,000 workers. The average job loss among the remaining 23 industries was 19 percent.
- In Northwest Ohio, the average wage across all manufacturing industries was $47,837 in 2005. This is 7.3 percent below the average wage of $51,610 reported in 2000 (after adjusting for inflation). It is also 2.2 percent less than the average wage ($48,911) paid to all manufacturing workers across the U.S. in 2005. Of the 80 manufacturing industries analyzed in this report, 50 percent reported wage declines between 2000 and 2005.
- Twenty-four manufacturing industries in NWO paid higher wages than the national average ($48,911) in 2005. These high-wage industries employed 58,341 workers and accounted for a manufacturing employment share of 45.5 percent. Only eight of the 24 industries reported wage decreases between 2000 and 2005. However, 69 percent of workers (40,365) within the high-wage category experienced wage decreases after adjusting for inflation.
- The average wage of manufacturing workers in Lucas County was $64,723 in 2005, an increase of 3.9 percent since 2000. This county's average wage is substantially higher than regional and national averages. A few large companies are likely responsible for driving up the average wage. BP America, Valero Energy, and Sunoco all have a presence in Lucas County; energy companies are known for paying high wages to their engineering and production staffs.
- Of the 59 Lucas County manufacturing industries that reported employment and wages in both 2000 and 2005, just over half (32) had increasing wages during that time. Nineteen industries reported wages higher than the national average. The vast majority of these industries had increasing wages between 2000 and 2005, although most had declining employment during that time period.

Key Industries

- Key manufacturing industries in NWO include those that met at least three of the following five criteria: the average wage was greater than the national manufacturing average ($48,911); change in wages (2000-2005) was greater than the manufacturing average at the national level after adjusting for inflation (-1.85 %); the industry employed at least 1,000 persons in NWO in 2005; change in employment was greater than the national manufacturing average (-17.4 %); and the industry had a location quotient (LQ) of 2.0 or greater.
    - Twenty-eight of the 80 industries at the four-digit NAICS level met the above criteria. The top-five key industries are: Nonmetallic Mineral Products (NAICS 3279); Motor Vehicle Parts (NAICS 3363); Rubber Products (NAICS 3262); Glass and Glass Products (NAICS 3272); and Household Appliances (NAICS 3352).
    - If the same criteria are applied to identify key industries in Lucas County (adjusting only the minimum employment level to include those with at least 200 workers), three industries qualify: Other Nonmetallic Mineral Products (NAICS 3279); Glass and Glass Products (NAICS 3272); and Soaps, Cleaners & Toilet Preparations (NAICS 3256).

Northwest Ohio Performance Compared to the U.S.

- Nationally, only two of 86 manufacturing industries at the four-digit NAICS level saw employment increases between 2000 and 2005—Other Food Manufacturing (7,300 jobs or 4.9%) and Pharmaceuticals and Medicines (16,200 jobs or 6%). Of the remaining 84 industries, 17 reported job losses of less than 10 percent, 27 had employment declines between 10 and 20 percent, 26 had job losses between 20 and 30 percent, and 14 industries lost more than 30 percent of their employees.
- Although Northwest Ohio and the U.S. both lost approximately 17 percent of their total manufacturing employment between 2000 and 2005, some industries performed better in NWO. Here, 20 of 80 industries reported employment gains during the five-year period. However, almost all industries reporting the highest percentage increase (>30%) had fewer than 100 employees.
- The pattern in Lucas County was similar with 17 of 70 industries adding jobs between 2000 and 2005, but most of those gaining jobs were small industries. Overall, the county lost 22 percent of its manufacturing jobs during that time period, a higher rate of decline than occurred throughout the region or nation.
- Due to the significant employment losses, total payroll also decreased appreciably between 2000 and 2005 after adjusting for inflation. In the U.S., manufacturing payroll declined by 19.7 percent during the five-year period. Manufacturing payroll in NWO declined even more—24.1 percent. Although total payroll fell more in Northwest Ohio than the U.S., there were four times the number of industries at the four-digit NAICS level in NWO that reported payroll increases than in the U.S. as a whole. Lucas County's manufacturing payroll fell 27.6 percent between 2000 and 2005. Although the majority of industries reported a decline in total payroll, several did show an increase (after adjusting for inflation).

INTRODUCTION

This report presents the results of a study of the manufacturing sector in Northwest Ohio (NWO). The study's purpose is to provide an understanding of recent trends in regional manufacturing industries in the context of longer-term trends and the national economy. This study was conducted for the Manufacturing Advocacy and Growth Network (MAGNET) by the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs. It is part of a broader effort to develop strategies to improve the competitiveness of Ohio manufacturers.

Northwest Ohio is defined as a 17-county region composed of 11 rural counties and three metropolitan areas that encompass six counties. The metro areas include the Lima MSA (Allen County), the Sandusky MSA (Erie County), and the Toledo MSA (Fulton, Lucas, Ottawa, and Wood Counties). The rural counties include Auglaize, Defiance, Hancock, Hardin, Henry, Mercer, Paulding, Putnam, Sandusky, Van Wert, and Williams.

This report begins with a description of the region and an explanation of the methodology and data sources used for analyses. The next section provides an overview of long-term trends in regional manufacturing in comparison to Ohio and the U.S. Section three examines short-term trends in manufacturing in Northwest Ohio, Ohio, and the U.S. This is followed by a more in-depth analysis of manufacturing industries in Northwest Ohio, including employment changes by county, county dependency on manufacturing, leading and lagging industries, industry concentration, and average wages. Section five identifies key manufacturing industries in the region, and the last section of the report compares recent industry performance in Northwest Ohio to industry performance in the U.S.

DATA AND METHODOLOGY

DATA SOURCES

This report is based on the North American Industrial Classification System (NAICS). The manufacturing sector includes those industries with NAICS classifications from 31 to 33.[1] The report analyzes trends in employment and average wages as well as the relative concentration of local industries in comparison to the nation (also known as location quotients).

This project utilizes two data sources: Economy.com long-term estimates based on the U.S. Bureau of Labor Statistics data and Covered Employment and Wages (ES202) data. Economy.com's historical employment data were used to build and analyze long-tem trends (1970-2005) for Northwest Ohio, the state of Ohio, and the nation.

The Covered Employment and Wages database contains company-level data collected by each state for unemployment compensation taxes. Nearly all employers with paid employees are required to file unemployment insurance reports (technically called ES202) to their respective states on a quarterly basis. The Center for Economic Development receives the data on a quarterly basis from the Bureau of Labor Market Information of the Ohio Department of Jobs and Family Services. The data include quarterly information on each company's name, address, industrial classification, employment, and payroll. This analysis used first quarter data from 2000 to 2005 for employment, payroll, and average wages (calculated as total payroll divided by total employment). Manufacturing industries were analyzed at the four-digit NAICS level.

Confidentiality restrictions limit data presentation in some parts of this report. If an industry has fewer than three companies within the geographic area of interest or a single company employs 80 percent or more of the personnel within an industry in the geographic area of interest, the data must be suppressed to avoid disclosing information about individual companies.

[1] Manufacturing industries are analyzed at the four-digit level; a complete listing of these industries can be found in several tables of Appendix A.

MEASURES OF ECONOMIC PERFORMANCE

To assess the state of manufacturing in Northwest Ohio, we considered three groups of economic measures. The first group includes measures of employment and employment change. Employment levels and employment change indicate the health of industries within the region, showing whether the industry is growing or declining and whether it is a large industry that simply cannot be ignored because of its size. A comparison of regional employment changes to national changes shows how our region is performing compared to the national average and points to industries that possibly have a regional competitive advantage. The factors leading to changes in manufacturing employment in Northwest Ohio are not addressed in this report. The data reveals net change in employment at the region, county, and industry level, but does not provide information about individual companies. The analysis does not determine whether specific companies have grown or downsized, opened a new facility or ceased operation, or moved to or from the area.

The second group of measures includes average wages (payroll per employee) and change in average wages. High wages may indicate high labor costs, but can also point to industries with a high share of skill- and knowledge-intense employment. We make the assumption that higher wages reflect higher skill levels, and therefore, a comparison of average wages in particular industries at the regional and national level indicates whether NWO employs highly skilled, high-wage labor or serves as a home for low-productivity, low-wage jobs.

To assess whether an industry is part of the economic base of our region, we engaged a third group of measures — the concentration of an industry in NWO relative to the concentration of the same industry within the national economy. This measure is known as a location quotient (LQ). The interpretation of location quotient is as follows: if an industry has a higher concentration in a regional economy relative to the concentration of this industry in the national economy (LQ>1), then the industry is a part of the regional economic base and produces some products for export outside the region. Such response to external demand brings money into the region, where it is spent or re-invested in the production process, triggering regional growth.

NORTHWEST OHIO DEFINITION

The northwestern part of the state of Ohio consists of two economic development outreach regions (as defined by the state) —North West Ohio and West Central Ohio. Together these regions are comprised of 17 counties. North West Ohio includes Defiance, Erie, Fulton, Henry, Lucas, Ottawa, Sandusky, Williams, and Wood counties. West Central Ohio includes Allen, Auglaize, Hancock, Hardin, Mercer, Paulding, Putnam, and Van Wert counties. In this report, the two regions will be referred to as Northwest Ohio (NWO). Lucas County, home to the city of Toledo, is the most urban and populous county in NWO. For this reason, additional attention is given to Lucas County throughout the report. Figure 1 illustrates the 17-county region.

Three metropolitan statistical areas (MSA) are located in NWO. They include Lima, Sandusky, and Toledo.[2] Northwest Ohio accounts for 17.4 percent of Ohio's land area, 25 percent of the land area in the state dedicated to farming, 11.4 percent of the state's population, and 11.2 percent of Ohio's employment.[3]

Figure 1. Northwest Ohio Counties

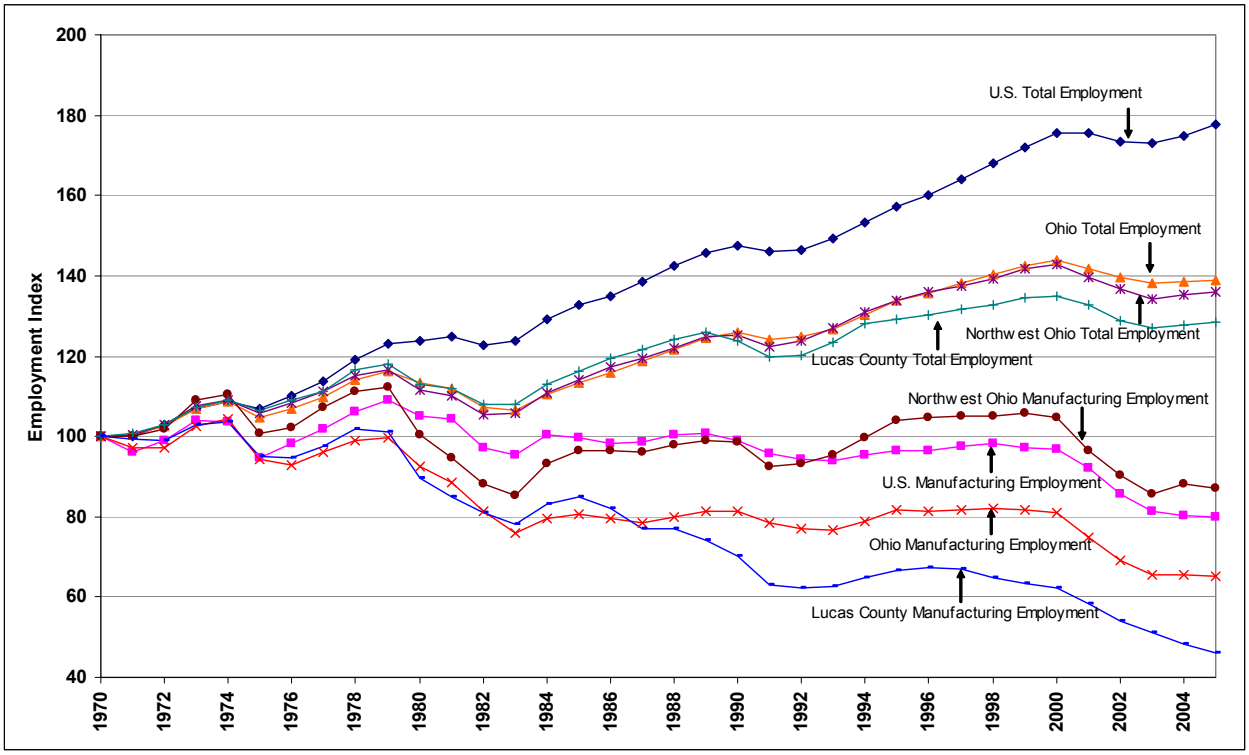
[2] The Lima and Sandusky MSAs each consist of only one county, Allen and Erie, respectively. The Toledo MSA includes four counties—Fulton, Lucas, Ottawa, and Wood.

[3] U.S. Census Bureau, State and County Quickfacts; United States Department of Agriculture, National Agriculture Statistics Services.

NORTHWEST OHIO VERSUS OHIO AND THE U.S.: LONG-TERM TRENDS

Long-term trends in the economies of Northwest Ohio (NWO), the state of Ohio, and the U.S. reveal that between 1970 and 2005 the total employment growth trends for Ohio and NWO are almost identical. Lucas County follows a similar trend through the early 1990s; we then begin to see a slower rate of growth than in the region and state. By comparison, the U.S. began to show higher levels of employment growth beginning in 1978 and continuing through 2005. Figure 2 illustrates these trends for both total employment and manufacturing employment.[4]

Figure 2. Total Employment and Manufacturing Employment, 1970 = 100[5]



From 1970 to 2005, total employment in NWO grew by 36.1 percent. This is slightly less than the growth rate reported across the state (38.8%) and significantly lower than the national growth rate of 77.8 percent. The growth rate in U.S. employment was more than double that of NWO. In Lucas County, total employment increased 28.3 percent, a substantially slower rate of growth than in the region, state, and nation.

[4] This long-term analysis is based on Economy.com data.

[5] In order to compare employment for small and large regions on the same graph, employment in each year is indexed to 1970 employment, which is equal to 100 in each region. The index represents the percentage change for each year calculated from 1970. Numbers below 100 point to declining employment, while numbers larger than 100 point to growing employment relative to the base year, 1970.

Long-term trends in manufacturing employment (NAICS 31-33) are quite different. NWO fared better than the state and nation. NWO reported a decline in manufacturing jobs of 12.9 percent between 1970 and 2005, significantly less than the 34.7 percent loss that occurred statewide and somewhat less than the 20.1 percent decline in the U.S. The experience of Lucas County was again much different than that of the region, the state, and the nation; between 1970 and 2005, the county lost more than half of its manufacturing jobs (53.8%). If Lucas County were excluded from the analysis, NWO would show a nine percent *gain* in manufacturing employment between 1970 and 2005. Furthermore, manufacturing employment in Lucas County continued its downward slope throughout this time period, while it began to level off in the region, state, and nation beginning in 2003.

In summary, although overall employment trends in NWO followed those of the U.S., the region grew less rapidly than the nation, but lost fewer manufacturing jobs. Lucas County fared worse than the region as a whole, with slower growth in total employment and a faster decline in manufacturing employment.

NORTHWEST OHIO VERSUS OHIO: SHORT-TERM EMPLOYMENT TRENDS

In this section, we provide a brief analysis of short-term (2000-2005) employment trends for Ohio versus Northwest Ohio (NWO) using the ES202 database.[6] During this five-year period, the U.S. experienced an eight-month recession that began in March 2001 and ended in November 2001.[7]

As shown in Table 1, total employment for Ohio and NWO declined by four percent and 4.8 percent, respectively. Total job loss in Lucas County was slightly higher at 5.7 percent. Job losses in the manufacturing sector were much greater. Between 2000 and 2005, Ohio lost 20.5 percent of its manufacturing employment compared to 17.2 percent in NWO and 22.2 percent in Lucas County. A detailed analysis of the data shows that across the state and in NWO, the biggest job losses in both manufacturing and total employment occurred between 2001 and 2002 (recessionary period). However, the share of job losses was much greater in manufacturing than collectively. In contrast, the period between 2004 and 2005 showed the smallest employment change. In fact, during this period, NWO reported a 0.2 percent increase in manufacturing employment and total employment across the state increased by 0.4 percent.

The share of manufacturing employment declined by just over three percentage points in both NWO and the state of Ohio between 2000 and 2005. In the first quarter of 2005, 22 percent of workers were employed in manufacturing industries in NWO compared to 15.6 percent across the state. In Lucas County, only 12.1 percent of workers were employed in manufacturing industries in 2005; 2.6 percent lower than the share in 2000.

Table 1. Employment Trends, 2000 to 2005

	2000	2005	Change	Percent Change
OHIO				
Total	5,413,620	5,195,014	-218,606	-4.0%
Manufacturing	1,020,936	811,485	-209,451	-20.5%
NORTHWEST OHIO				
Total	611,703	582,143	-29,560	-4.8%
Manufacturing	154,882	128,261	-26,621	-17.2%
LUCAS COUNTY				
Total	234,329	220,936	-13,394	-5.7%
Manufacturing	34,481	26,812	-7,669	-22.2%

[6] ES202 data are based on quarterly unemployment compensation reports collected by each state under federal mandate. The data include information on each company's name, address, industrial classification, employment and earnings.

[7] National Bureau of Economic Research, Business Cycle Expansions and Contractions http://www.nber.org/cycles/cyclesmain.html. Accessed April 24, 2006.

NORTHWEST OHIO (NWO) MANUFACTURING ANALYSIS

In this section we begin an in-depth analysis of manufacturing trends in the 17-county NWO region. First, we consider changes in total employment versus manufacturing employment by county. Next, we examine each county's dependency on manufacturing. This is followed by an analysis of manufacturing industries at the four-digit NAICS level to determine which industries experienced the largest employment gains and losses. We then examine industry concentration in NWO and average wages for manufacturing industries.

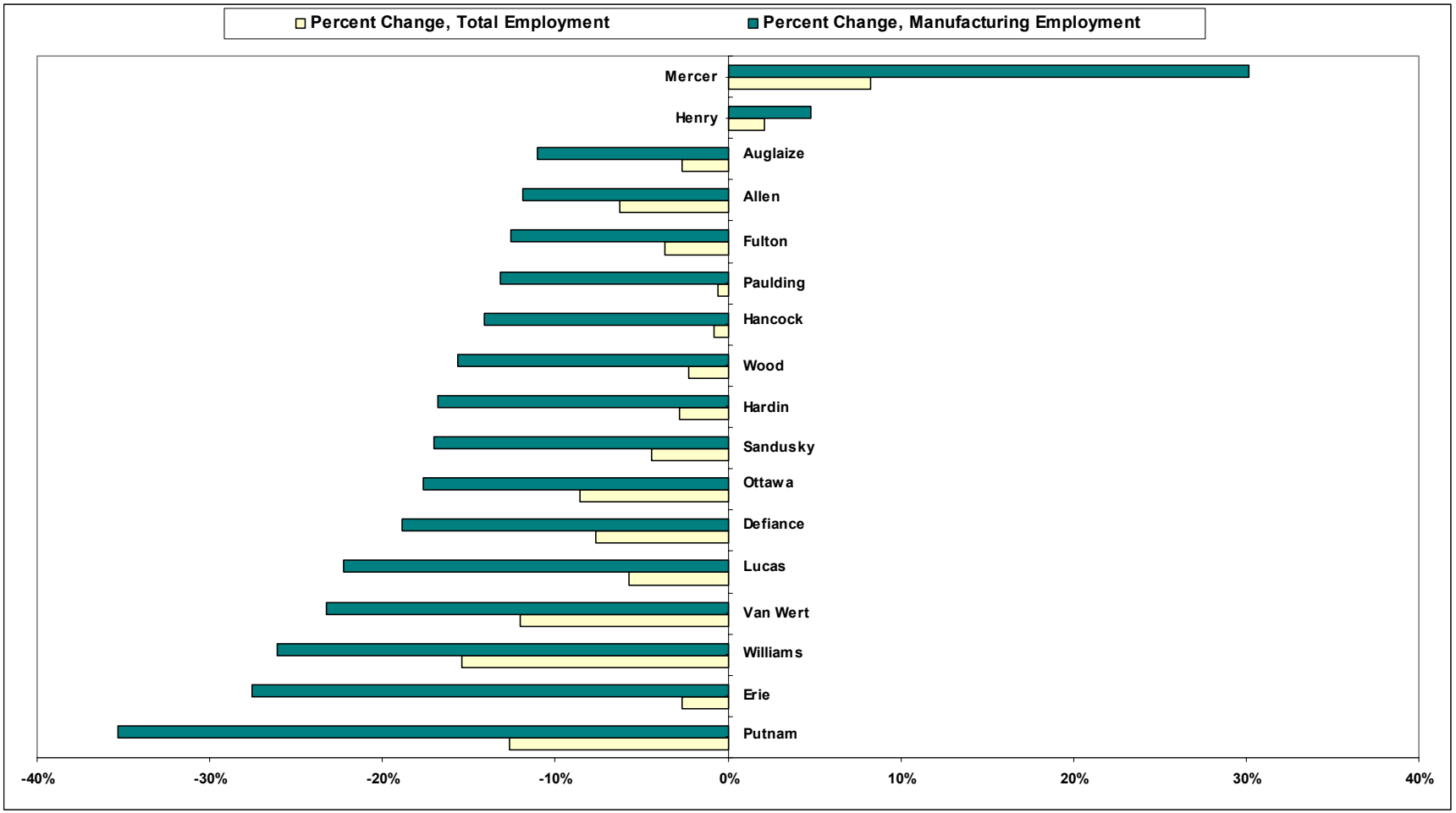
CHANGE IN TOTAL EMPLOYMENT AND MANUFACTURING EMPLOYMENT BY COUNTY

Fifteen of 17 counties in NWO reported a decline in both total employment and manufacturing employment between 2000 and 2005. As shown in Figure 3, Henry and Mercer Counties are the only exceptions. Henry County showed a two percent increase in total employment and almost five percent in manufacturing. Mercer County experienced total employment growth of more than eight percent and a manufacturing job increase of 30 percent (1,061 jobs). The gain in manufacturing employment is due to the opening of two new production facilities and major expansions at four other facilities. If the manufacturing sector were removed from Mercer County's total employment figures, the county would have shown an employment gain of only 167 jobs.

Although all counties had declining employment between 2000 and 2005, losses were minor in Paulding and Hancock Counties (both less than 1%) and relatively small in Auglaize, Hardin, Wood, and Erie Counties (all less than 3%). The counties experiencing the greatest losses in total employment were Williams (-15.4%), Putnam (-12.7%), and Van Wert (-12.0%). Looking exclusively at the manufacturing sector, counties with the largest job losses were Putnam (-35.3%), Erie (-27.6%), Williams (-26.1%), Van Wert (-23.3%), and Lucas (-22.2%). Table A-1 in Appendix A shows detailed employment statistics for each NWO county.

From Figure 3, we see that across all 17 NWO counties, the percentage change (positive or negative) in manufacturing employment is always greater than the change in total employment. This percentage change ranges from 1.7 times greater in Williams County to 23 times greater in Paulding County. The rate of manufacturing job loss in Lucas County was nearly four times the rate of job loss across all industry sectors.

Figure 3. Change in Total and Manufacturing Employment, 2000-2005



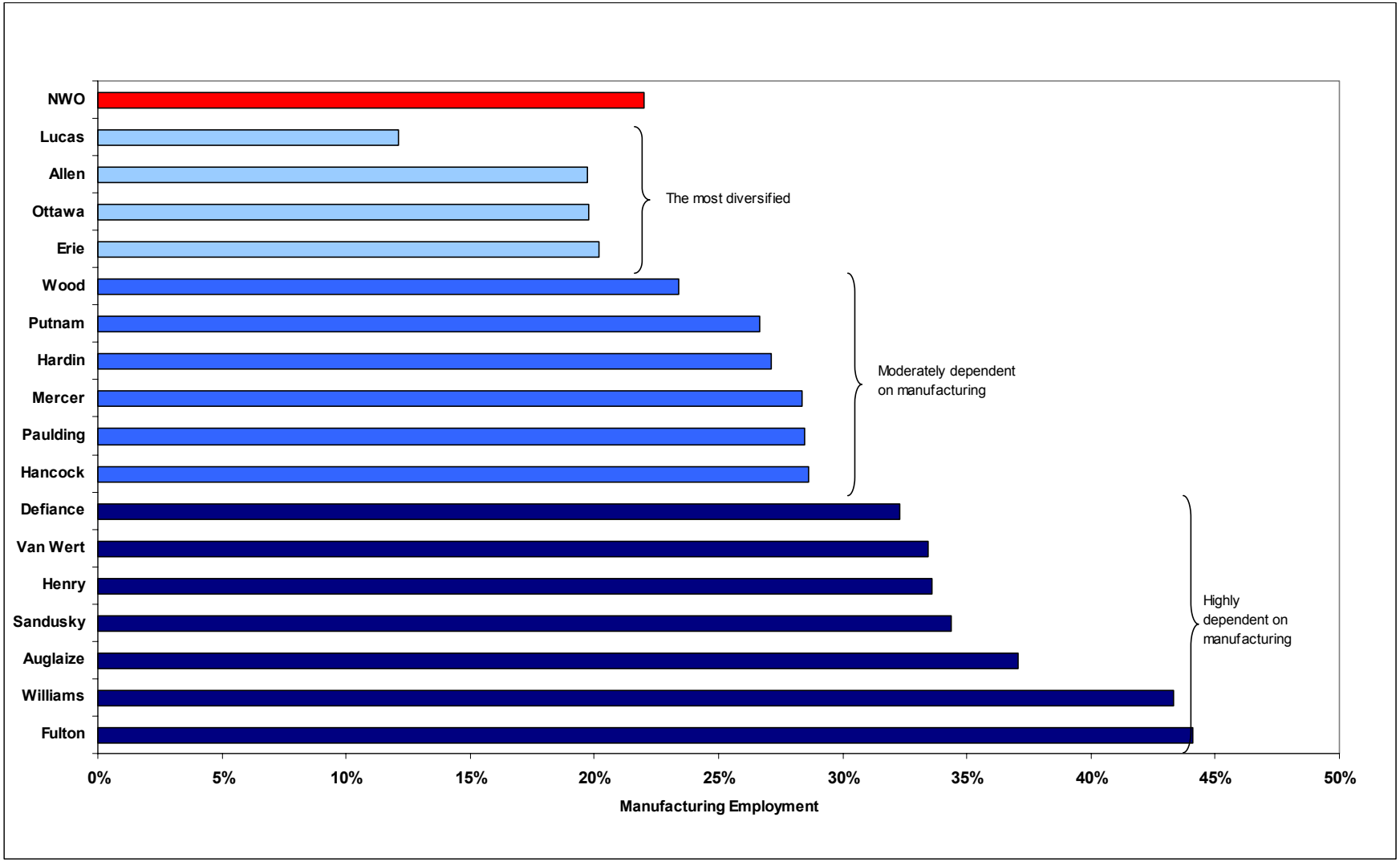
DEPENDENCY ON MANUFACTURING, 2005

An interesting difference among the counties located in Northwest Ohio is the dominance of the manufacturing sector in their respective economies. As shown in Figure 4, the counties in which manufacturing accounts for the smallest share of total employment are Lucas, Allen, Ottawa, and Erie. The average share of manufacturing jobs in these four counties is 14.6 percent. However, two of these counties—Lucas and Allen—rank among the top five in total manufacturing jobs in NWO. In contrast, the three counties that are most highly dependent on manufacturing (Fulton, Williams, and Auglaize) report an average manufacturing employment share of 41.5 percent. This is almost double the share size for the NWO region and 2.7 times the share size for the state of Ohio. The counties bordering Indiana and Michigan may experience spillover of activity from manufacturing centers in those states. Table 2 shows manufacturing employment statistics by county for the NWO region.

Table 2. NWO Manufacturing Employment, 2005

County	Total Employment	Manufacturing Employment	Manufacturing Share
Allen	54,724	10,782	19.7%
Auglaize	18,767	6,952	37.0%
Defiance	16,944	5,474	32.3%
Erie	35,699	7,213	20.2%
Fulton	20,427	9,004	44.1%
Hancock	40,954	11,722	28.6%
Hardin	8,584	2,327	27.1%
Henry	11,443	3,847	33.6%
Lucas	220,936	26,812	12.1%
Mercer	16,124	4,577	28.4%
Ottawa	12,520	2,478	19.8%
Paulding	5,091	1,449	28.5%
Putnam	10,459	2,787	26.6%
Sandusky	25,850	8,886	34.4%
Van Wert	10,909	3,649	33.4%
Williams	16,555	7,175	43.3%
Wood	56,158	13,127	23.4%
NWO	**582,143**	**128,261**	**22.0%**

Figure 4. Employment Dependency on Manufacturing, 2005



LEADING AND LAGGING INDUSTRIES IN MANUFACTURING EMPLOYMENT

As shown in Table 1, manufacturing employment in Northwest Ohio declined by more than 17 percent from 154,882 workers in 2000 to 128,261 workers in 2005. In this section, we identify manufacturing industries that experienced the largest employment gains (leading industries) and declines (lagging industries) between 2000 and 2005.[8] Identification is based upon the North American Industry Classification System (NAICS). NAICS lists 80 industries within the manufacturing sector at the four-digit classification level. Table A-2 in Appendix A shows NWO employment trends for each of these industries.

Since manufacturing industries in NWO report employment levels ranging from less than 100 to more than 10,000, we categorized the manufacturing sector into two groups—large industries and small to medium industries. Large industries are those that had at least 2,000 employees in both 2000 and 2005. Small to medium industries are those that had between 250 and 1,999 employees in both 2000 and 2005. To be considered a leading or lagging industry, the industry must have reported an employment change of at least 20 percent. Industries with fewer than 250 employees were not considered in the analysis because of the minor role they play in the NWO economy. In 2000, industries with fewer than 250 employees accounted for less than one percent of total manufacturing employment.

Only nine large industries were identified as leading or lagging. However, these industries combined accounted for approximately one-third of the total NWO manufacturing employment in 2005. Collectively, these industries showed a net employment loss of more than 20 percent. Eight of the industries are classified as lagging and only one industry (NAICS 3118—Bakeries and Tortilla Production) was classified as leading. Technically, this should not be a leading industry because its employment increase was only nine percent. However, because it was the only large industry (>2,000 employees) out of 20 that reported an employment gain, we felt that it should be included in the analysis. Table 3 provides detailed employment statistics for large leading and lagging industries, and Figure 5 shows employment comparisons for these industries.

[8] It is important to note that leading and lagging industries are being defined solely on the basis of employment. This analysis does not consider output or productivity measures, nor does it consider the performance of individual companies within an industry.

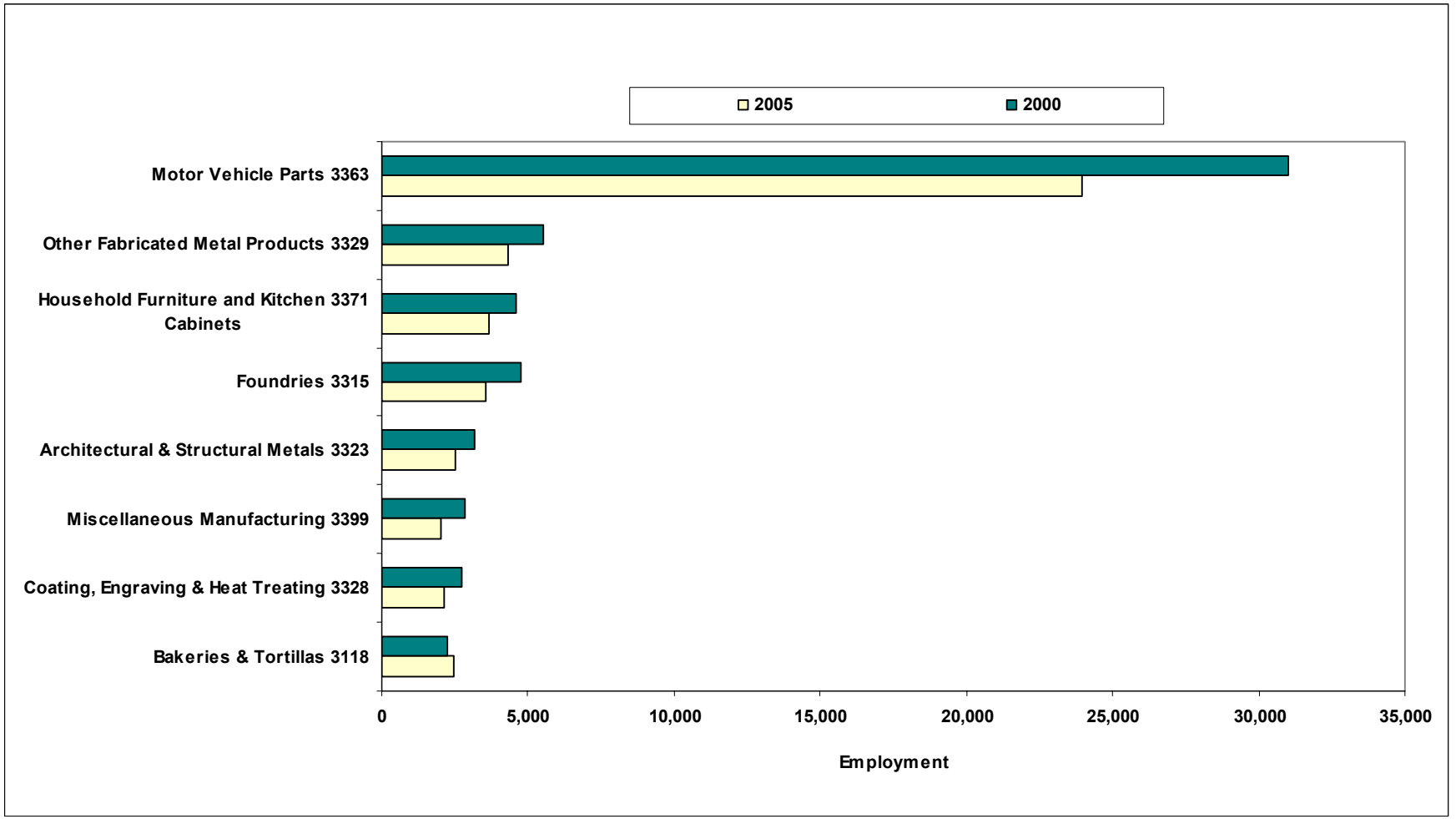
Table 3. NWO Manufacturing – Large Leading and Lagging Industries

NAICS	Description	2000 Employment	2005 Employment	Change	Percent Change
Leading Industries:					
3118	Bakeries & Tortillas	2,268	2,477	210	9.2%
Lagging Industries:					
3363	Motor Vehicle Parts	30,989	23,956	-7,033	-22.7%
3361	Motor Vehicles	s	s	s	s
3329	Other Fabricated Metal Products	5,549	4,343	-1,206	-21.7%
3315	Foundries	4,785	3,548	-1,237	-25.9%
3371	Household Furniture and Kitchen Cabinets	4,567	3,663	-903	-19.8%
3323	Architectural & Structural Metals	3,166	2,526	-640	-20.2%
3399	Miscellaneous Manufacturing	2,855	2,049	-805	-28.2%
3328	Coating, Engraving & Heat Treating	2,733	2,157	-576	-21.1%

An “s” indicates data is suppressed to avoid disclosing information about individual companies.

Table 3 shows that eight of the nine industries (NAICS 3118 being the exception) would be considered by most observers as traditional (old-line) manufacturing that can be characterized as labor intensive. The four industries that are metal related (NAICS 3329, 3315, 3323, and 3328) reported a 10.5 percent share of NWO manufacturing employment in 2000 decreasing to a 9.8 percent share in 2005. The two motor vehicle-related industries account for a large share of manufacturing employment in NWO, but following substantial job losses, this share declined slightly between 2000 and 2005.

Figure 5. NWO Manufacturing Employment Levels – Large Leading and Lagging Industries



The Motor Vehicles industry (NAICS 3361) is not shown in the graph due to confidentiality restrictions.

In Northwest Ohio, two small to medium manufacturing industries were identified as leading and 10 were identified as lagging. The two leading industries are Other Transportation Equipment and Iron & Steel Mills — both reported a substantial increase in employment between 2000 and 2005, although numbers are suppressed to avoid disclosing information about individual companies. Table 4 provides detailed employment statistics and Figure 6 compares employment levels by industry for 2000 and 2005.

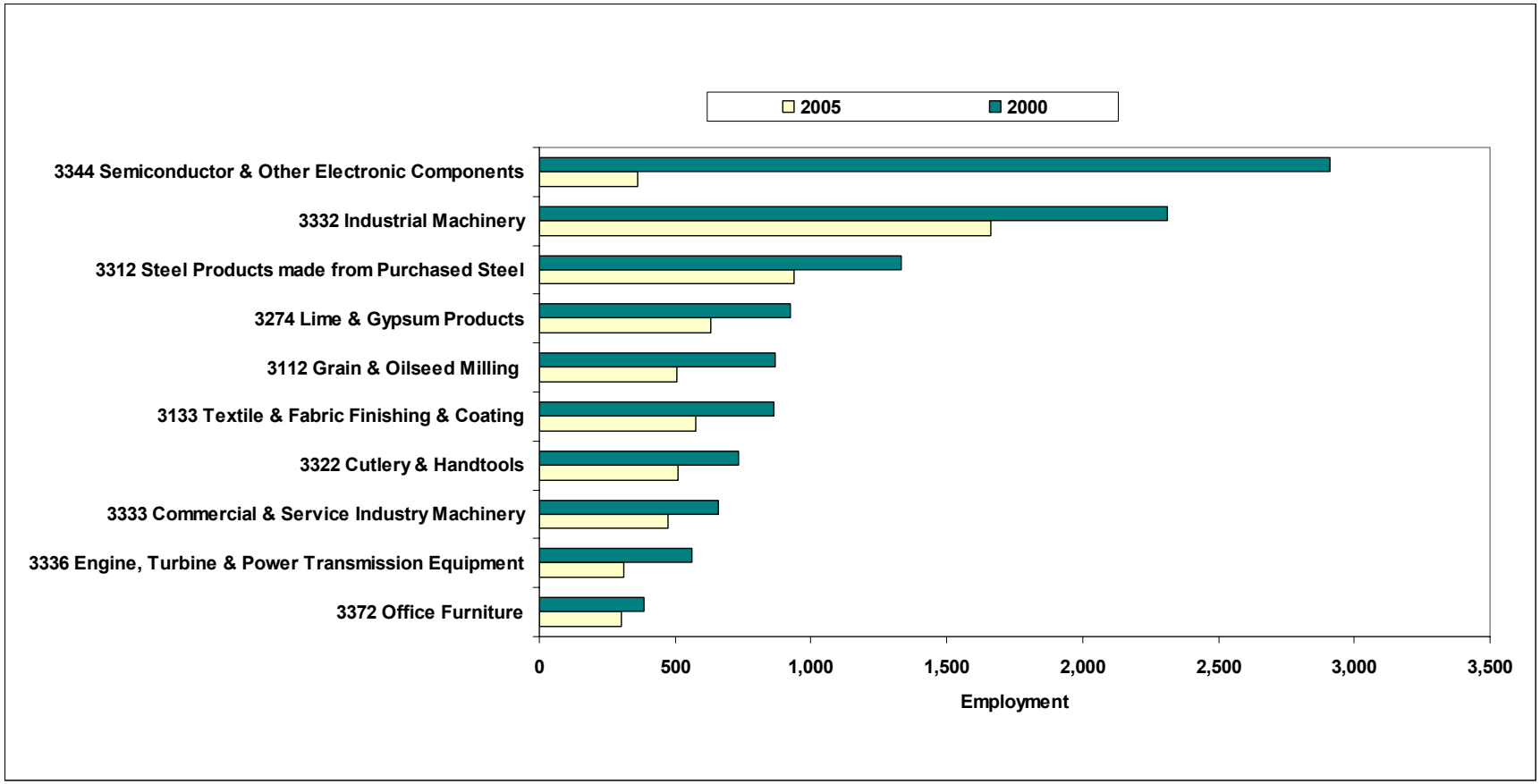
Table 4. NWO Manufacturing – Small to Medium Leading and Lagging Industries

NAICS	Description	2000 Employment	2005 Employment	Change	Percent Change
Leading Industries:					
3369	Other Transportation Equipment	s	s	s	s
3311	Iron & Steel Mills	s	490	s	s
Lagging Industries:					
3344	Semiconductor & Other Electronic Components	2,910	364	-2,546	-87.5%
3332	Industrial Machinery	2,311	1,662	-650	-28.1%
3312	Steel Products Made from Purchased Steel	1,331	937	-393	-29.6%
3274	Lime & Gypsum Products	925	630	-295	-31.9%
3112	Grain & Oilseed Milling	869	504	-365	-42.0%
3133	Textile & Fabric Finishing & Coating	861	576	-285	-33.1%
3322	Cutlery & Handtools	733	510	-223	-30.4%
3333	Commercial & Service Industry Machinery	661	472	-189	-28.5%
3336	Engine, Turbine & Power Transmission Equipment	560	311	-249	-44.5%
3372	Office Furniture	383	301	-82	-21.5%

An “s” indicates data is suppressed to avoid disclosing information about individual companies.

The 10 lagging industries reported a collective employment decline of nearly 5,300 jobs between 2000 and 2005. The industry that reported the biggest job loss was semiconductors and electronic components. More than 2,500 workers, or 87.5 percent of the industry workforce, lost their jobs between 2000 and 2005. Over 75 percent of these losses can be attributed to two companies that ceased operations in NWO. One manufactured cathode ray picture tubes, and the other produced a variety of analog semiconductors.

Figure 6. NWO Manufacturing Employment Levels – Small to Medium Lagging Industries



The two leading industries – Other Transportation Equipment (NAICS 3361) and Iron and Steel Mills (NAICS 3311) – are not shown in the graph due to confidentiality restrictions.

Lucas County

Lucas County accounts for just over 20 percent of NWO manufacturing employment. Consequently, we define large industries in Lucas County as those with at least 400 employees in both 2000 and 2005 (20% of the employment level used to define large industries in NWO). Industries included in the small to medium industries grouping employed between 50 and 399 employees in both 2000 and 2005. To be considered leading or lagging, the industries must have reported an employment change of at least 20 percent. Table A-7 in the appendix reports 2000 and 2005 employment levels for all manufacturing industries in Lucas County.

Twelve industries in Lucas County had employment levels of at least 400 in 2000 and 2005, however, only four reported an employment change of 20 percent or more (shown in Table 5). All had declining employment and, therefore, are classified as lagging industries. Motor Vehicle Parts (NAICS 3363), the largest manufacturing industry in the county, reported substantial job loss.

Table 5. Lucas County Manufacturing – Large Lagging Industries

NAICS	Description	2000 Employment	2005 Employment	Change	Percent Change
3363	Motor Vehicle Parts	7,682	5,458	-2,224	-28.9%
3361	Motor Vehicles	s	s	s	s
3231	Printing and Related Support Activities	1,801	1,377	-423	-23.5%
3328	Coating, Engraving, and Heat Treating	932	723	-209	-22.4%

An “s” indicates data is suppressed to avoid disclosing information about individual companies.

Of the 10 large industries that did not meet the criteria for leading or lagging based on an employment change of greater than 20 percent, eight experienced employment losses greater than 10 percent. Only two large industries gained employment — Other Nonmetallic Mineral Products (NAICS 3279) and Soap, Cleaners & Toilet Preparations (NAICS 3256); both gains were relatively small (74 and 21 jobs, respectively).

Thirty-two manufacturing industries in Lucas County are categorized as small to medium industries; 21 experienced a change in employment of at least 20 percent. Nineteen of these industries experienced employment losses and are classified as lagging industries. Only two small to medium industries experienced employment gains of greater than 20 percent. Foundries (NAICS 3315) gained 100 employees between 2000 and 2005, an increase of 32 percent. Electrical Equipment (NAICS 3353) gained just 41 employees, but this is an increase of 30.8 percent. Among the lagging industries, four industries lost at least half of their 2000 employment base by 2005. Ten other industries lost more than a quarter of their employment during this time period.

Table 6. Lucas County Manufacturing – Small to Medium Leading and Lagging Industries

NAICS	Description	2000 Employment	2005 Employment	Change	Percent Change
Leading Industries:					
3315	Foundries	313	413	100	32.0%
3353	Electrical Equipment	134	175	41	30.8%
Lagging Industries:					
3112	Grain and Oilseed Milling	s	s	s	s
3323	Architectural and Structural Metals	573	320	-253	-44.2%
3339	Other General Purpose Machinery	526	328	-198	-37.7%
3391	Medical Equipment and Supplies	505	319	-186	-36.9%
3115	Dairy Products	s	s	s	s
3312	Steel Products from Purchased Steel	414	164	-251	-60.5%
3253	Agricultural Chemicals	s	s	s	s
3364	Aerospace Products and Parts	330	237	-93	-28.1%
3329	Other Fabricated Metal Products	329	166	-163	-49.6%
3399	Other Miscellaneous Manufacturing	299	236	-63	-21.0%
3324	Boiler, Tanks, and Shipping Containers	254	184	-70	-27.5%
3322	Cutlery and Handtools	212	162	-50	-23.5%
3262	Rubber Products	196	140	-56	-28.6%
3273	Cement and Concrete Products	191	136	-55	-28.9%
3252	Resin, Synthetic & Rubber Fibers	169	105	-64	-38.0%
3259	Other Chemical Products	s	s	s	s
3332	Industrial Machinery	137	99	-38	-27.8%
3372	Office Furniture	122	58	-64	-52.3%
3345	Navigation & Control Instruments	121	80	-41	-33.6%

An “s” indicates data is suppressed to avoid disclosing information about individual companies.

INDUSTRY CONCENTRATION – LOCATION QUOTIENTS

Location quotients (LQs) are used to measure the degree to which an industry is concentrated in a region relative to a reference economy. Mathematically, the location quotient is the ratio of an industry's employment share in NWO to that industry's employment share across the U.S. Table A-3 in the Appendix lists the employment LQ for each manufacturing industry at the four-digit NAICS level. If an LQ is greater than 1.0, NWO has a higher concentration of that industry's employment when compared to the U.S. as a whole. A very high LQ indicates a disproportionately large share of the workforce. For example, from Table 7, we see that the rubber products industry (NAICS 3262) has an LQ of 9.6. This means that the concentration of persons manufacturing rubber products in Northwest Ohio is nearly 10 times greater than found across the U.S.

By definition, if a manufacturing industry in NWO has an LQ greater than 1.0, then NWO specializes in that industry and is a net exporter of that industry's product. Conversely, if a manufacturing industry reports an LQ less than 1.0, then the region is a net importer of that industry's product. Theoretically, the region wants to be a net exporter because sales of that product bring new monies into NWO, thereby creating wealth. The selection of a location quotient value that clearly identifies NWO as a major exporter of an industry's product is left to the discretion of the analyst. After reviewing the literature, we decided that an industry would be considered a major exporter (wealth generator) if it had an LQ of 2.0 or greater. Table 7 lists these industries along with their employment levels.

Table 7 indicates that of the 28 manufacturing industries that can be considered major exporters, five industries (NAICS 3369, 3256, 3362, 3111, and 3326) showed an employment increase between 2000 and 2005. The average job gain was about 15 percent. Only two of these five industries reported employment levels of more than 1,000 workers—Soaps and Cleaners and Motor Vehicle Bodies and Trailers. The average job loss among the remaining 23 industries was 19 percent.

Of the 94,667 employees working in the major exporting industries shown in Table 7, more than 75 percent are found in the following manufacturing sub-sectors (three-digit NAICS): NAICS 336, Transportation Equipment (30,855 employees); NAICS 326, Plastic and Rubber Products (15,670 employees); NAICS 333, Machinery Manufacturing (10,179 employees); NAICS 332, Fabricated Metal Products (8,935 employees); and NAICS 327, Nonmetallic Mineral Products (6,996 employees). With the exception NAICS 327 (48 establishments), each of these sub-sectors has well in excess of 100 establishments in the NWO region. In addition,

although each sub-sector reports one or more dominant companies (establishments) in terms of employment, no single establishment is so large that if it ceased operations, the industry would no longer have a significant economic impact on NWO.

Table 7. NWO Manufacturing Industries with High LQs, 2005

Industry	Description	LQ	2000 Employment	2005 Employment	Change	Percent Change
3352	Household Appliances	s	s	s	s	s
3262	Rubber Products	9.26	7,688	7,071	-617	-8.0%
3279	Nonmetallic Mineral Products	8.08	2,895	2,691	-204	-7.0%
3363	Motor Vehicle Parts	7.69	30,989	23,956	-7,033	-22.7%
3272	Glass Products	7.56	4,260	3,675	-585	-13.7%
3274	Lime and Gypsum Products	7.30	925	630	-295	-31.9%
3315	Foundries	4.73	4,785	3,548	-1,237	-25.9%
3335	Metalworking Machinery	4.58	5,057	4,135	-922	-18.2%
3369	Other Transportation Equipment	s	s	s	s	s
3361	Motor Vehicles	s	s	s	s	s
3339	General Purpose Machinery	3.67	5,192	4,382	-810	-15.6%
3241	Petroleum and Coal Products	3.63	2,032	1,784	-248	-12.2%
3312	Steel Products from Purchased Steel	3.47	1,331	937	-394	-29.6%
3114	Fruit and Vegetable Preserving	3.44	3,089	2,513	-576	-18.6%
3329	Fabricated Metal Products	3.40	5,549	4,343	-1,206	-21.7%
3328	Coating, Engraving, and Heat Treating	3.31	2,733	2,157	-576	-21.1%
3324	Boilers, Tanks, and Shipping Containers	3.27	1,557	1,337	-220	-14.2%
3314	Nonferrous Metals (except Aluminum)	3.08	1,168	1,001	-167	-14.3%
3261	Plastics Products	3.03	10,097	8,599	-1,498	-14.8%
3332	Industrial Machinery	3.00	2,311	1,662	-649	-28.1%
3256	Soap, Cleaners, and Toilet Preparations	2.82	1,265	1,450	185	14.6%
3362	Motor Vehicle Bodies and Trailers	2.68	1,720	2,017	297	17.3%
3111	Animal Food Products	2.46	521	536	15	2.8%
3259	Other Chemical Products	2.23	1,095	1,063	-32	-3.0%
3326	Spring and Wire Products	2.17	562	587	25	4.5%
3253	Agricultural Chemical Products	s	s	s	s	s
3371	Household Furniture and Kitchen Cabinets	2.14	4,567	3,663	-904	-19.8%
3322	Cutlery and Handtools	2.01	733	510	-223	-30.4%

An “s” indicates data is suppressed to avoid disclosing information about individual companies.

Lucas County

Table 8 lists those industries that have high location quotients (≥2.0) in Lucas County. Most of the industries that appear in Table 8 also appear in Table 7. In fact, there are just two exceptions — Textile and Fabric Finishing (NAICS 3133) and Grain and Oilseed Milling (NAICS 3112) are highly concentrated in Lucas County but not NWO. This indicates that these industries have a very strong presence in Lucas County, but not the surrounding counties. There are several industries that are highly concentrated in NWO but not Lucas County, indicating that these industries are primarily found in the region's outer counties.

Of the 11 manufacturing industries shown in Table 8, two added jobs between 2000 and 2005 — Nonmetallic Mineral Products (NAICS 3279) and Soaps, Cleaners, and Toilet Preparations (NAICS 3256). The latter of the two is still a relatively small industry in Lucas County. The nine industries with declining employment reported a total job loss of more than 5,000 between 2000 and 2005.

Table 8. Lucas County Manufacturing Industries with High LQs, 2005

Industry	Description	LQ	2000 Employment	2005 Employment	Change	Percent Change
3279	Nonmetallic Mineral Products	14.43	1,750	1,824	74	4.2%
3272	Glass Products	10.71	2,282	1,977	-305	-13.4%
3361	Motor Vehicles	s	s	s	s	s
3241	Petroleum and Coal Products	5.14	1,172	957	-214	-18.3%
3363	Motor Vehicle Parts	4.62	7,682	5,458	-2,224	-28.9%
3253	Agricultural Chemical Products	s	s	s	s	s
3256	Soap, Cleaners, and Toilet Preparations	3.56	674	695	21	3.1%
3133	Textile and Fabric Finishing	s	s	s	s	s
3335	Metalworking Machinery	3.03	1,160	1,037	-123	-10.6%
3328	Coating, Engraving, and Heat Treating	2.92	932	723	-209	-22.4%
3112	Grain and Oilseed Milling	s	s	s	s	s

An "s" indicates data is suppressed to avoid disclosing information about individual companies.

AVERAGE WAGES

In Northwest Ohio, the average wage across all manufacturing industries was $47,837 in 2005. This is 7.3 percent below the average wage of $51,610 reported in 2000 (after adjusting for inflation). It is also 2.2 percent less than the average wage ($48,911) paid to all manufacturing workers across the U.S. in 2005. Of the 80 manufacturing industries analyzed in this report, 50 percent reported wage declines between 2000 and 2005. Table A-4 in Appendix A provides detailed wage data by four-digit NAICS.

Of the 40 manufacturing industries reporting wage declines between 2000 and 2005, the average reduction was 17.7 percent after adjusting for inflation ($54,889 in 2000 vs. $45,172 in 2005). Conversely, of the 40 industries that experienced wage gains, the average increase was 14 percent ($45,948 in 2000 vs. $52,390 in 2005). The declining wage industries accounted for 63 percent of total manufacturing employment in NWO compared to 37 percent for those industries reporting wage gains. Interestingly, both groups (those with wage gains and those with wage declines) saw an average employment reduction of about 17 percent between 2000 and 2005.

Twenty-four manufacturing industries in NWO paid higher wages than the national average ($48,911) for manufacturing in 2005. These high-wage industries employed 58,341 workers and accounted for a manufacturing employment share of 45.5 percent. Sixteen of the 24 industries reported wage increases between 2000 and 2005. However, 69 percent of workers (40,365) within the high-wage category worked in industries that experienced wage decreases after adjusting for inflation. Table 9 shows industry wage data. Corresponding employment data reveal that three manufacturing industry sub-sectors dominate the high-wage industries: NAICS 336, Transportation Equipment (29,266 employees); NAICS 331, Primary Metals (6,644 employees); and NAICS 325, Chemical Manufacturing (3,491 employees). Combined, these sub-sectors accounted for over two-thirds of the high-wage employment.

Table 9 reveals that three industries stand out in terms of wages paid in 2005: Nonmetallic Mineral Products ($139,055); Petroleum and Coal Products ($95,291); and Basic Chemicals ($85,112). Using the Harris Industrial Directory (2005) and Internet searches, we found that five establishments are responsible for driving up wages: BP America in Lima, BP America in Toledo, Owens Corning in Toledo, Sunoco in Toledo, and Valero Energy in Lima. Combined, they accounted for 52 percent of the total employment in NAICS 3241, 3251, and 3279. The shutdown of even one of these establishments would result in a negative impact on the NWO economy. Owens Corning dominates NAICS 3279 in Northwest Ohio. With the

presence of its world headquarters in Toledo, Owens Corning has the effect of driving up the average industry wage. BP America, Sunoco, and Valero Energy have major refining and chemical processing operations in NWO. These energy giants are well known for paying high wages to their engineering and production staffs. Since their workforce accounts for a majority of the industry total, it tends to significantly raise the average wage at the four-digit NAICS level.

Table 9. Northwest Ohio High-Wage Industries 2000-2005

NAICS	Description	2000 Wages	2005 Wages	Change	Percent Change
3279	Other Nonmetallic Mineral Products	$115,680	$139,055	$23,375	20.2%
3241	Petroleum and Coal Products	$78,714	$95,291	$16,577	21.1%
3251	Basic Chemicals	$67,174	$85,112	$17,939	26.7%
3272	Glass and Glass Products	$55,351	$69,518	$14,167	25.6%
3315	Foundries	$70,739	$69,386	-$1,354	-1.9%
3314	Nonferrous Metal (except Aluminum) Production	$59,862	$62,317	$2,454	4.1%
3253	Pesticide, Fertilizer & Agricultural Chemicals	s	s	s	s
3311	Iron and Steel Mills	s	$59,121	s	s
3369	Other Transportation Equipment	s	s	s	s
3252	Resin, Synthetic Rubber & Synthetic Fibers	$53,425	$57,962	$4,537	8.5%
3324	Boiler, Tanks, and Shipping Containers	$50,719	$56,777	$6,058	11.9%
3256	Soap, Cleaners & Toilet Preparations	$53,326	$56,767	$3,441	6.5%
3353	Electrical Equipment	$43,534	$55,633	$12,100	27.8%
3274	Lime and Gypsum Products	$50,293	$53,457	$3,163	6.3%
3364	Aerospace Products and Parts	$58,238	$52,936	-$5,302	-9.1%
3361	Motor Vehicles	s	s	s	s%
3344	Semiconductor & Other Electronic Components	$47,304	$51,226	$3,922	8.3%
3313	Aluminum Production and Processing	s	s	s	s
3112	Grain and Oilseed Milling	$60,977	$50,924	-$10,054	-16.5%
3363	Motor Vehicle Parts	$62,935	$50,834	-$12,102	-19.2%
3332	Industrial Machinery	$43,978	$50,635	$6,656	15.1%
3255	Paints, Coatings, and Adhesives	$64,281	$50,324	-$13,957	-21.7%
3334	HVAC & Commercial Refrigeration Equipment	s	s	s	s
3262	Rubber Products	$49,686	$49,200	-$486	-1.0%

An “s” indicates data is suppressed to avoid disclosing information about individual companies.
All 2000 wages have been inflated to 2005 levels.

Lucas County

The average wage of manufacturing workers in Lucas County was $64,723 in 2005, an increase of 3.9 percent since 2000 (after adjusting for inflation). This county's average wage is substantially higher than regional and national averages. Several of the companies that were previously mentioned as a reason for high manufacturing wages in NWO are located in Lucas County and likely skew the average.

Of the 59 Lucas County manufacturing industries that reported employment and wages in both 2000 and 2005, just over half (32) had increasing wages during that time. These industries accounted for 38 percent of Lucas County's manufacturing employment in 2005. The 27 industries that reported declining wages between 2000 and 2005 accounted for 62 percent of manufacturing employment. Nineteen industries reported wages higher than the national average for manufacturing (Table 10). The majority of these industries had increasing wages between 2000 and 2005, although most had declining employment during that time period. Table A-8 in Appendix A provides the average wage for all manufacturing industries in Lucas County.

Table 10. Lucas County High-Wage Industries 2000-2005

NAICS	Description	2000 Wages	2005 Wages	Change	Percent Change
3279	Other Nonmetallic Mineral Products	$160,002	$183,968	$23,966	15.0%
3353	Electrical Equipment	$57,592	$108,129	$50,536	87.7%
3241	Petroleum and Coal Products	$78,947	$103,470	$24,523	31.1%
3272	Glass and Glass Products	$61,877	$81,181	$19,304	31.2%
3363	Motor Vehicle Parts	$80,602	$68,278	-$12,323	-15.3%
3253	Pesticide, Fertilizer & Agricultural Chemicals	s	s	s	s
3251	Basic Chemicals	$60,476	$63,086	$2,610	4.3%
3324	Boiler, Tanks, and Shipping Containers	$60,950	$63,076	$2,126	3.5%
3259	Other Chemical Products	$47,070	s	s	s
3364	Aerospace Products and Parts	$66,853	$59,633	-$7,221	-10.8%
3255	Paints, Coatings, and Adhesives	$68,904	$59,459	-$9,445	-13.7%
3256	Soap, Cleaners & Toilet Preparations	$57,245	$59,454	$2,209	3.9%
3112	Grain and Oilseed Milling	s	$54,491	s	s
3252	Resin, Synthetic Rubber & Synthetic Fibers	$53,310	$53,857	$547	1.0%
3361	Motor Vehicles	s	s	s	s
3315	Foundries	$32,456	$51,115	$18,659	57.5%
3254	Pharmaceuticals and Medicines	s	s	s	s
3333	Service Industry Machinery	$48,743	$49,203	$460	0.9%
3339	Other General Purpose Machinery	$48,049	$49,005	$956	2.0%

An "s" indicates data is suppressed to avoid disclosing information about individual firms.
All 2000 wages have been inflated to 2005 levels.

KEY INDUSTRIES

In the previous sections, we analyzed manufacturing industries in Northwest Ohio with respect to employment level, employment concentration (location quotients), and wages. In this section we combine these variables and generate a list of the 20 key manufacturing industries at the four-digit NAICS level for 2005.

To be included on the list, an industry had to meet at least three of the following five criteria: the average wage was greater than the national manufacturing average ($48,911); change in wages (2000-2005) was greater than the manufacturing average at the national level after adjusting for inflation (-1.85 %); the industry employed at least 1,000 persons in NWO in 2005; change in employment was greater than the national manufacturing average (-17.4 %); and the industry had a location quotient (LQ) of 2.0 or greater. Wage and employment change are indicators of an industry's competitive position in manufacturing. A high LQ shows the industry to be an exporter, thereby creating wealth in NWO. Industries with fewer than 100 employees in 2005 or those reporting an LQ of less than 1.0 were excluded from consideration. Twenty-eight of the 80 industries at the four-digit NAICS level met the above criteria. The 20 key industries, including their rankings, are detailed in Table 11.[9] Figure 7 shows the 20 key industries by average wage, employment concentration, and size.

The top five industries in Table 11 (Nonmetallic Mineral Products, NAICS 3279; Motor Vehicle Parts, NAICS 3363; Rubber Products, NAICS 3262; Glass and Glass Products, NAICS 3272; and Household Appliances, NAICS 3352) are all major exporters. Output from businesses in Nonmetallic Mineral Products is sold primarily to the commercial and residential building industry. Products include insulation, roofing, and siding. Companies in the Glass Products and Household Appliances industries sell most of their products to residential consumers. These products range from glassware and china to washers and dryers. The largest industries among the top five as measured by employment, NAICS 3363 and 3262, are part of the motor vehicle industry. Currently, companies in NAICS 3363 are experiencing great financial problems. Two of the big-three auto parts suppliers, Delphi and Dana, have filed for bankruptcy. The third major supplier, Visteon, has closed three plants and is in the process of

[9] The rankings were generated by normalizing observations for each variable using median scores (m-scores) and then averaging the m-scores by industry. The industry with the highest average M-score was ranked first and so forth. The median score is analogous to the familiar z-score, but it uses a set of measures that are less susceptible to the influence of outliers than z-scores. The z-score transformation is commonly used when seeking to compare the relative standings of items from distributions with different means, standard deviations, or units. Median scores are an alternative to z-scores for index creation when the variables used have highly skewed distributions. For detailed information, see Furdell, K., Wolman, H.L., Hill, E.W. (2004). *Have Central Cities Come Back?* Paper presented at the 2004 annual meeting of the Urban Affairs Association in Washington, DC.

selling six additional plants. Dana is headquartered in Toledo. The other two are headquartered in nearby Michigan. Results of the shakeout in the motor vehicle parts industry could have a depressing effect on the NWO economy.

Table 11. NWO Key Manufacturing Industries, 2005

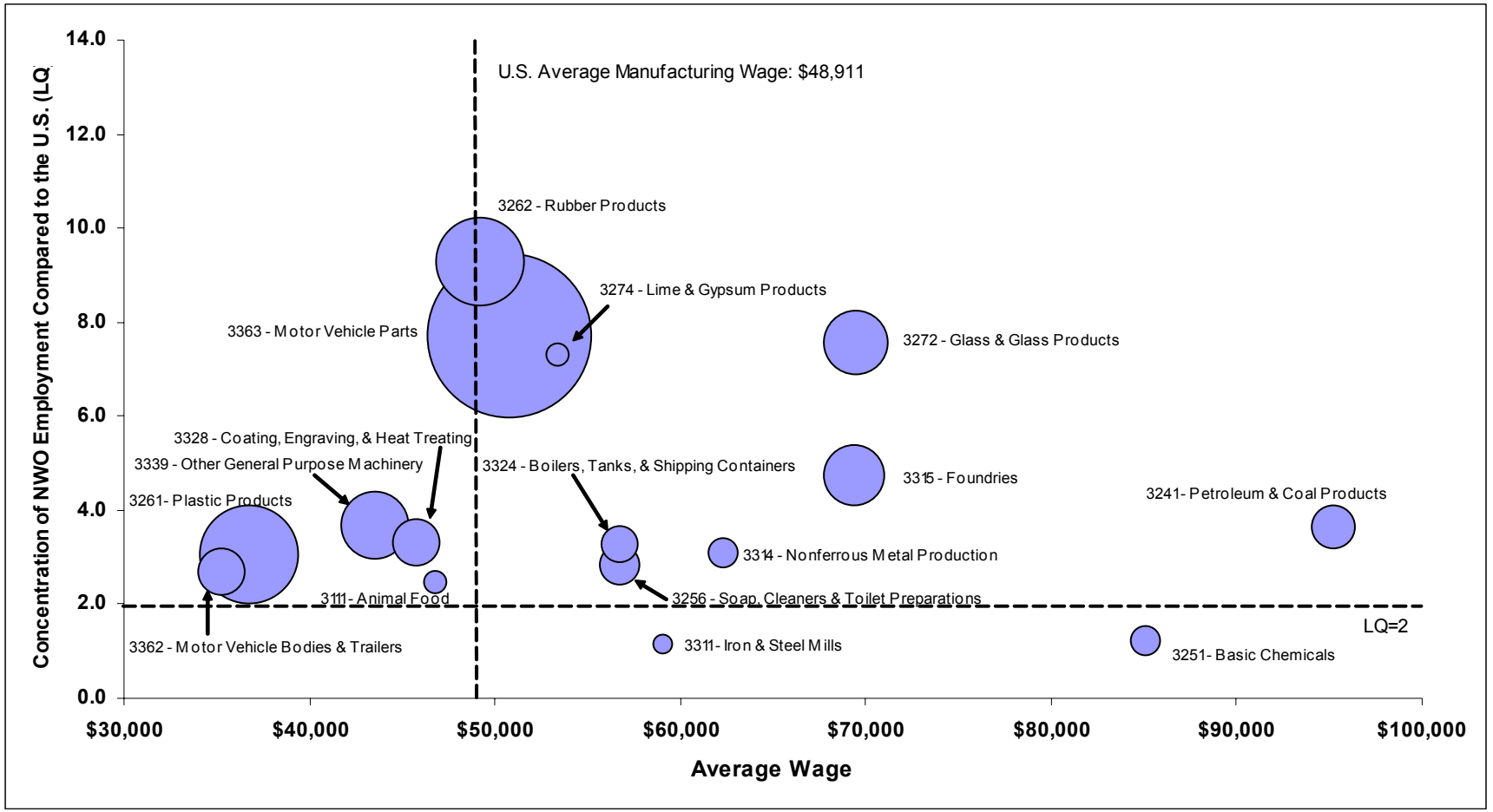
NAICS	Description	Rank	2005 Wages	Wage Change 2000-05	2005 Employment	Employment Change 2000-05	Location Quotient
3279	Other Nonmetallic Mineral Products	1	$139,055	20.2%	2,691	-7.0%	8.08
3363	Motor Vehicle Parts	2	$50,834	-19.2%	23,956	-22.7%	7.69
3262	Rubber Products	3	$49,200	-1.0%	7,071	-8.0%	9.26
3272	Glass and Glass Products	4	$69,518	25.6%	3,675	-13.7%	7.56
3352	Household Appliances	5	s	s	s	s	s
3241	Petroleum and Coal Products	6	$95,291	21.1%	1,784	-12.2%	3.63
3111	Animal Food	7	$46,810	65.2%	536	2.8%	2.46
3369	Other Transportation Equipment	8	s	s	s	s	s
3251	Basic Chemicals	9	$85,112	26.7%	836	-4.2%	1.22
3256	Soap, Cleaners & Toilet Preparations	10	$56,767	6.5%	1,450	14.6%	2.82
3253	Agricultural Chemicals	11	s	s	s	s	s
3261	Plastic Products	12	$36,795	9.5%	8,599	-14.8%	3.03
3311	Iron and Steel Mills	13	$59,121	s	490	s	1.15
3315	Foundries	14	$69,386	-1.9%	3,548	-25.9%	4.73
3362	Motor Vehicle Bodies & Trailers	15	$35,284	13.0%	2,017	17.3%	2.68
3274	Lime and Gypsum Products	16	$53,457	6.3%	630	-31.9%	7.30
3324	Boiler, Tanks, and Shipping Containers	17	$56,777	11.9%	1,337	-14.1%	3.27
3339	Other General Purpose Machinery	18	$43,564	-0.8%	4,382	-15.6%	3.67
3314	Nonferrous Metal Production	19	$62,317	4.1%	1,001	-14.3%	3.08
3328	Coating, Engraving, and Heat Treating	20	$45,803	19.2%	2,157	-21.1%	3.31

An “s” indicates data is suppressed to avoid disclosing information about individual companies.
Wage change represents difference after 2000 wages have been inflated to 2005 levels.

If the same criteria are applied to identify key industries in Lucas County (adjusting only the minimum employment level to include those with at least 200 workers), three industries qualify. All are included in Table 11 — Other Nonmetallic Mineral Products (NAICS 3279), Glass and Glass Products (NAICS 3272), and Soaps, Cleaners & Toilet Preparations (NAICS 3256).

Figure 7 shows us that several of the 20 key industries in NWO paid wages above the U.S. manufacturing average ($48,911) in 2005. Fifteen of the industries reported real wage (adjusted for inflation) increases between 2000 and 2005 ranging from 4.1 percent (Nonferrous Metal Production) to 65.2 percent (Animal Food). In contrast, only five of the top 20 industries experienced employment growth between 2000 and 2005. Employment losses ranged from seven percent in Nonmetallic Mineral Products to 32 percent in Lime and Gypsum Products. It should again be noted that the U.S. lost more than 17 percent of its manufacturing employment between 2000 and 2005.

Figure 7. Top 20 NWO Manufacturing Industries by Average Wage, Employment Concentration, and Size, 2005



Bubble size indicates relative industry employment level in 2005. See Table 7 for exact number of workers by industry.
A bubble representing Other Nonmetallic Mineral Products (NAICS 3279), was intentionally omitted from Figure 7. The average wage for this industry ($139,055) is so high relative to the other industries shown, that including it would have the effect of clustering almost all other bubbles in one spot thus making identification extremely difficult. Household Appliances (NAICS 3352), Other Transportation Equipment (NAICS 3369), and Agricultural Chemicals (NAICS 3253) are not shown due to confidentiality restrictions.

NORTHWEST OHIO INDUSTRIES' PERFORMANCE COMPARED TO THE U.S. – EMPLOYMENT AND PAYROLL

Nationally, only two of 86 manufacturing industries at the four-digit NAICS level saw employment increases between 2000 and 2005—Other Food Manufacturing (7,300 jobs or 4.9%) and Pharmaceuticals and Medicines (16,200 jobs or 6%). Of the remaining 84 industries, 17 reported job losses of less than 10 percent, 27 had employment declines between 10 and 20 percent, 26 had job losses between 20 and 30 percent, and 14 industries lost more than 30 percent of their employees. Among those with the greatest job losses was Cut and Sew Apparel (men's and women's outerwear), which saw its employment plummet by more than 200,000 jobs, or 50 percent. Communications Equipment lost almost 100,000 jobs, or 40 percent, and electronic components shed about 200,000 jobs, or 30 percent. Table A-5 in the appendix shows detailed manufacturing employment statistics for Northwest Ohio and the United States.

Although Northwest Ohio and the U.S. both lost approximately 17 percent of their total manufacturing employment between 2000 and 2005, some industries performed better in NWO. Here, 20 of 80 industries reported employment gains during the five-year period. However, almost all industries reporting the highest percentage increase (>30%) had fewer than 100 employees. The biggest employment gains (more than 200 employees) were in Motor Vehicle Bodies and Trailers (297 jobs), Animal Slaughtering and Processing (241 jobs), and Bakeries and Tortillas (209 jobs). As discussed in previous sections, the biggest employment decline was in Motor Vehicle Parts, where more than 7,000 jobs (23%) were lost. The pattern in Lucas County was similar, where 17 of 70 industries added jobs between 2000 and 2005, but most of those gaining jobs were small industries. Overall, the county lost 22 percent of its manufacturing jobs during that time period, a higher rate of decline than occurred throughout the region or nation.

Due to the significant employment losses, payroll also decreased appreciably between 2000 and 2005 after adjusting for inflation. In the U.S., manufacturing payroll declined by 19.7 percent during the five-year period. Manufacturing payroll in NWO declined even more—24.1 percent. Table A-6 in the appendix provides detailed payroll statistics for both NWO and the United States. Although total payroll fell more in Northwest Ohio than the U.S., there were four times the number of industries at the four-digit NAICS level in NWO that reported payroll increases than in the U.S. as a whole. In fact, of the five industries nationally that reported payroll gains after adjusting for inflation, only one was in double digits—Petroleum and Coal

Products. Here payroll rose by almost $270 million, or 12 percent.[10] Lucas County's manufacturing payroll fell 27.6 percent between 2000 and 2005. Although the majority of industries reported a decline in total payroll, several did show an increase.

In NWO, 14 of the 20 industries that reported employment gains also reported increases in total payroll. The biggest gainers in NWO between 2000 and 2005 include Nonmetallic Mineral Products where payroll increased by $8.8 million (10.5%), Glass Products, which saw an increase of $4.2 million (7.1%), and Motor Vehicle Bodies and Trailers, which also experienced an increase of $4.2 million (31%). In Lucas County, 15 industries reported an increase in total payroll between 2000 and 2005; all but two reported employment increases as well. The exceptions were Power Transmission Equipment (NAICS 3336), where employment held constant while payroll grew 18 percent, and Glass and Glass Products (NAICS 3272), where employment declined 13 percent and payroll increased 15 percent.

[10] Dollar values given in this discussion represent the payroll for the 1st quarter of the calendar year.

CONCLUDING REMARKS

Over the long-term (1970 to 2005), Northwest Ohio (NWO) experienced modest job growth, but lagged behind the state and grew much slower than the nation. Employment growth in Lucas County, the region's most populous county, was substantially slower than the region as a whole. Manufacturing employment declined in the region, state, and nation; however, in this case, NWO fared better. Northwest Ohio lost 12.9 percent of its manufacturing jobs between 1970 and 2005, compared to 34.7 percent statewide, and 20.1 percent across the U.S. Lucas County did not do as well as the region as a whole — it lost 53.8 percent of its manufacturing jobs.

In recent years (2000 to 2005), total employment fell moderately in the region and state, but declines in the manufacturing sector continued at a rapid pace. Ohio lost 20.5 percent of its manufacturing jobs, while Northwest Ohio declined 17.2 percent, and Lucas County manufacturing employment fell by 22.2 percent. Despite the sharp decline, the manufacturing sector provides a large share of the jobs in Northwest Ohio (22% in 2005), and further job losses will undoubtedly affect the regional economy. The analysis of industry concentration shows that NWO is highly specialized in several industries; however, most of these industries have reported decreasing employment in recent years. When we identified those industries with both sizable employment and substantial change in employment levels (leading and lagging industries), we found that most had declining employment and were therefore classified as lagging industries. Furthermore, the auto industry holds a very large share of manufacturing employment in the region, which leaves Northwest Ohio in a precarious position, given the large cutbacks that have occurred in automotive manufacturing.

Although employment trends may be discouraging, it should also be noted that the Northwest Ohio region has retained a very strong presence in several manufacturing industries — 28 industries have a location quotient greater than 2.0 based on 2005 employment. This indicates that they have the potential to export products and generate wealth for the region. Manufacturing jobs in NWO pay fairly high wages, and the industries that pay a wage above the national average for manufacturing account for nearly half of the region's manufacturing employment. In addition, when we compare employment and wage trends in specific industries (at the four-digit level) in Northwest Ohio versus the nation, we find that several industries performed better in NWO than across the U.S.

APPENDIX A – DATA TABLES

Table A-1. Change in Total Employment and Manufacturing Employment by County, 2000-2005

County	Total Employment				Manufacturing Employment			
	2000	2005	Change	Percent Change	2000	2005	Change	Percent Change
Allen	58,373	54,724	-3,649	-6.3%	12,238	10,782	-1,456	-11.9%
Auglaize	19,273	18,767	-506	-2.6%	7,816	6,952	-865	-11.1%
Defiance	18,353	16,944	-1,410	-7.7%	6,743	5,474	-1,270	-18.8%
Erie	36,670	35,699	-971	-2.6%	9,960	7,213	-2,747	-27.6%
Fulton	21,204	20,427	-777	-3.7%	10,296	9,004	-1,292	-12.5%
Hancock	41,293	40,954	-339	-0.8%	13,647	11,722	-1,924	-14.1%
Hardin	8,832	8,584	-248	-2.8%	2,796	2,327	-469	-16.8%
Henry	11,206	11,443	237	2.1%	3,669	3,847	177	4.8%
Lucas	234,329	220,936	-13,394	-5.7%	34,481	26,812	-7,669	-22.2%
Mercer	14,896	16,124	1,228	8.2%	3,516	4,577	1,061	30.2%
Ottawa	13,694	12,520	-1,174	-8.6%	3,009	2,478	-531	-17.6%
Paulding	5,120	5,091	-29	-0.6%	1,669	1,449	-220	-13.2%
Putnam	11,974	10,459	-1,515	-12.7%	4,310	2,787	-1,523	-35.3%
Sandusky	27,055	25,850	-1,205	-4.5%	10,706	8,886	-1,820	-17.0%
Van Wert	12,399	10,909	-1,490	-12.0%	4,755	3,649	-1,107	-23.3%
Williams	19,578	16,555	-3,022	-15.4%	9,707	7,175	-2,532	-26.1%
Wood	57,453	56,158	-1,295	-2.3%	15,562	13,127	-2,436	-15.7%

Data Source: Quarterly Census of Employment and Wages (ES202)
Prepared by: Center for Economic Development, Maxine Goodman Levin College of Urban Affairs, Cleveland State University

Table A-2. Northwest Ohio Manufacturing Employment Trends, 2000-2005

NAICS	Description	Employment		Change	Percent Change
		2000	2005		
3111	Animal Food Products	521	536	15	2.8%
3112	Grain and Oilseed Milling	869	504	-365	-42.0%
3113	Sugar and Confectionery Products	523	532	9	1.7%
3114	Fruit and Vegetable Preserving	3,089	2,513	-576	-18.6%
3115	Dairy Products	1,274	1,079	-195	-15.3%
3116	Animal Slaughtering and Processing	1,396	1,637	241	17.2%
3118	Bakeries and Tortillas	2,268	2,477	210	9.2%
3119	Other Food Manufacturing	1,036	1,017	-19	-1.8%
3121	Beverages	342	s	s	s
3132	Fabric Mills	s	13	s	s
3133	Textile and Fabric Finishing	861	576	-285	-33.1%
3141	Textile Furnishings Mills	44	36	-8	-18.2%
3149	Other Textile Products	187	217	30	16.0%
3152	Cut and Sew Apparel	135	67	-69	-50.7%
3159	Apparel Accessories	s	s	s	s
3161	Leather and Hide Tanning	s	s	s	s
3169	Other Leather and Allied Products	s	s	s	s
3211	Sawmills and Wood Preservation	37	23	-14	-37.8%
3212	Veneer, Plywood & Engineered Wood Products	187	375	187	100.0%
3219	Other Wood Products	1,100	976	-125	-11.3%
3221	Pulp, Paper, and Paperboard Mills	----	s	s	s
3222	Converted Paper Products	2,372	2,153	-219	-9.2%
3231	Printing and Related Support Activities	3,742	3,469	-273	-7.3%
3241	Petroleum and Coal Products	2,032	1,784	-248	-12.2%
3251	Basic Chemicals	873	836	-36	-4.2%
3252	Resin, Synthetic Rubber & Synthetic Fibers	386	328	-58	-15.0%
3253	Pesticide, Fertilizer & Agricultural Chemicals	s	s	s	s
3254	Pharmaceuticals and Medicines	26	s	s	s
3255	Paints, Coatings, and Adhesives	518	480	-38	-7.3%
3256	Soap, Cleaners & Toilet Preparations	1,265	1,450	185	14.6%
3259	Other Chemical Product and Preparations	1,095	1,063	-33	-3.0%
3261	Plastic Products	10,097	8,599	-1,497	-14.8%
3262	Rubber Products	7,688	7,071	-617	-8.0%
3271	Clay Products and Refractory	349	234	-115	-33.0%
3272	Glass and Glass Products	4,260	3,675	-585	-13.7%
3273	Cement and Concrete Products	895	954	59	6.6%
3274	Lime and Gypsum Products	925	630	-295	-31.9%
3279	Other Nonmetallic Mineral Products	2,895	2,691	-204	-7.0%
3311	Iron and Steel Mills	s	490	s	s
3312	Steel Products from Purchased Steel	1,331	937	-393	-29.6%
3313	Aluminum Production and Processing	s	s	s	s
3314	Nonferrous Metal (except Aluminum) Production	1,168	1,001	-167	-14.3%
3315	Foundries	4,785	3,548	-1,237	-25.9%

Table A-2. Northwest Ohio Manufacturing Employment Trends, 2000-2005 (continued)

NAICS	Description	Employment		Change	Percent Change
		2000	2005		
3321	Forging and Stamping	980	869	-111	-11.3%
3322	Cutlery and Handtools	733	510	-223	-30.4%
3323	Architectural and Structural Metals	3,166	2,526	-640	-20.2%
3324	Boiler, Tanks, and Shipping Containers	1,557	1,337	-220	-14.1%
3325	Hardware Manufacturing	s	s	s	s
3326	Spring and Wire Products	562	587	25	4.5%
3327	Machine Shops and Turned Products	2,917	2,665	-252	-8.6%
3328	Coating, Engraving, and Heat Treating	2,733	2,157	-576	-21.1%
3329	Other Fabricated Metal Products	5,549	4,343	-1,206	-21.7%
3331	Agriculture, Construction & Mining Machinery	650	718	68	10.5%
3332	Industrial Machinery	2,311	1,662	-650	-28.1%
3333	Commercial and Service Industry Machinery	661	472	-189	-28.5%
3334	HVAC & Commercial Refrigeration Equipment	s	s	s	s
3335	Metalworking Machinery	5,057	4,135	-922	-18.2%
3336	Engine & Power Transmission Equipment	560	311	-249	-44.5%
3339	Other General Purpose Machinery	5,192	4,382	-810	-15.6%
3341	Computer and Peripheral Equipment	s	s	s	s
3342	Communications Equipment	33	59	26	79.8%
3343	Audio and Video Equipment	9	0	-9	-100.0%
3344	Semiconductor & Other Electronic Components	2,910	364	-2,546	-87.5%
3345	Navigation, Electromedical & Control Instruments	321	269	-52	-16.3%
3346	Magnetic and Optical Media Reproduction	s	s	s	s
3351	Electric Lighting Equipment	s	s	s	s
3352	Household Appliances	s	s	s	s
3353	Electrical Equipment	640	556	-84	-13.1%
3359	Other Electrical Equipment and Components	1,323	1,201	-122	-9.2%
3361	Motor Vehicles	s	s	s	s
3362	Motor Vehicle Bodies & Trailers	1,720	2,017	297	17.3%
3363	Motor Vehicle Parts	30,989	23,956	-7,033	-22.7%
3364	Aerospace Products and Parts	514	428	-85	-16.6%
3366	Ship and Boat Building	s	s	s	s
3369	Other Transportation Equipment	s	s	s	S
3371	Household Furniture and Kitchen Cabinets	4,567	3,663	-903	-19.8%
3372	Office Furniture	383	301	-82	-21.5%
3379	Other Furniture Related Products	65	37	-28	-42.9%
3391	Medical Equipment and Supplies	752	623	-129	-17.2%
3399	Other Miscellaneous Manufacturing	2,855	2,049	-805	-28.2%
Total		**154,882**	**128,261**	**-26,621**	**-17.2%**

An “s” indicates data is suppressed to avoid disclosing information about individual companies.
Data Source: Quarterly Census of Employment and Wages (ES202)
Prepared by: Center for Economic Development, Maxine Goodman Levin College of Urban Affairs, Cleveland State University

Table A-3. Northwest Ohio Manufacturing Location Quotients, 2005

NAICS	Description	U.S. Employment	U.S. Employment Share	NW Ohio Employment	NW Ohio Employment Share	LQ
3352	Household Appliances	87,556	0.00067888	s	s	s
3262	Rubber Products	169,169	0.00131168	7,071	0.01214707	9.26
3279	Other Nonmetallic Mineral Products	73,804	0.00057225	2,691	0.00462258	8.08
3363	Motor Vehicle Parts	689,831	0.00534873	23,956	0.04115140	7.69
3272	Glass and Glass Products	107,741	0.00083539	3,675	0.00631288	7.56
3274	Lime and Gypsum Products	19,117	0.00014823	630	0.00108221	7.30
3315	Foundries	166,277	0.00128926	3,548	0.00609472	4.73
3335	Metalworking Machinery	199,980	0.00155058	4,135	0.00710307	4.58
3369	Other Transportation Equipment	38,750	0.00030046	s	s	s
3361	Motor Vehicles	251,619	0.00195097	s	s	s
3339	Other General Purpose Machinery	264,605	0.00205166	4,382	0.00752793	3.67
3241	Petroleum and Coal Products	108,806	0.00084365	1,784	0.00306511	3.63
3312	Steel Products from Purchased Steel	59,845	0.00046402	937	0.00161014	3.47
3114	Fruit and Vegetable Preserving	162,088	0.00125678	2,513	0.00431738	3.44
3329	Other Fabricated Metal Products	283,386	0.00219729	4,343	0.00746037	3.40
3328	Coating, Engraving, and Heat Treating	144,503	0.00112043	2,157	0.00370585	3.31
3324	Boiler, Tanks, and Shipping Containers	90,497	0.00070168	1,337	0.00229611	3.27
3314	Nonferrous Metal (except Aluminum) Production	72,053	0.00055868	1,001	0.00171951	3.08
3261	Plastic Products	629,357	0.00487984	8,599	0.01477186	3.03
3332	Industrial Machinery	122,543	0.00095016	1,662	0.00285440	3.00
3256	Soaps, Cleaners & Toilet Preparations	113,911	0.00088323	1,450	0.00249022	2.82
3362	Motor Vehicle Bodies & Trailers	166,864	0.00129381	2,017	0.00346536	2.68
3111	Animal Food Products	48,195	0.00037369	536	0.00092016	2.46
3259	Other Chemical Product and Preparations	105,424	0.00081742	1,063	0.00182544	2.23
3326	Spring and Wire Products	60,008	0.00046528	587	0.00100892	2.17
3253	Pesticide, Fertilizer & Agricultural Chemicals	40,605	0.00031484	s	s	s
3371	Household Furniture and Kitchen Cabinets	379,398	0.00294173	3,663	0.00629284	2.14
3322	Cutlery and Handtools	56,128	0.00043520	510	0.00087665	2.01
3133	Textile and Fabric Finishing	64,400	0.00049934	576	0.00098945	1.98
3118	Bakeries and Tortillas	277,606	0.00215247	2,477	0.00425554	1.98
3359	Other Electrical Equipment and Components	136,233	0.00105631	1,201	0.00206364	1.95
3112	Grain and Oilseed Milling	60,243	0.00046711	504	0.00086577	1.85
3115	Dairy Products	129,515	0.00100422	1,079	0.00185292	1.85
3169	Other Leather and Allied Products	14,719	0.00011413	s	s	s
3325	Hardware Manufacturing	36,599	0.00028378	s	s	s
3327	Machine Shops and Turned Products	336,437	0.00260862	2,665	0.00457791	1.75
3321	Forging and Stamping	109,852	0.00085176	869	0.00149219	1.75
3255	Paints, Coatings and Adhesives	67,378	0.00052243	480	0.00082511	1.58
3113	Sugar and Confectionary Products	76,133	0.00059031	532	0.00091329	1.55
3351	Electric Lighting Equipment	62,102	0.00048152	425	0.00073063	1.52
3323	Architectural and Structural Metals	387,044	0.00300102	2,526	0.00433971	1.45
3119	Other Food Manufacturing	157,929	0.00122453	1,017	0.00174757	1.43
3222	Converted Paper Products	345,131	0.00267604	2,153	0.00369898	1.38
3399	Other Miscellaneous Manufacturing	345,379	0.00267796	2,049	0.00352033	1.31

Table A-3. Northwest Ohio Manufacturing Location Quotients, 2005 (continued)

NAICS	Description	U.S. Employment	U.S. Employment Share	NW Ohio Employment	NW Ohio Employment Share	LQ
3251	Basic Chemicals	151,723	0.00117641	836	0.00143665	1.22
3231	Printing and Related Support Activities	648,945	0.00503171	3,469	0.00595902	1.18
3311	Iron and Steel Mills	94,809	0.00073512	490	0.00084172	1.15
3273	Cement and Concrete Products	221,402	0.00171668	954	0.00163935	0.95
3333	Commercial and Service Industry Machinery	111,608	0.00086537	472	0.00081137	0.94
3271	Clay Products and Refractory	62,317	0.00048319	234	0.00040139	0.83
3353	Electrical Equipment	152,226	0.00118031	556	0.00095452	0.81
3331	Agriculture, Construction & Mining Machinery	202,160	0.00156748	718	0.00123395	0.79
3336	Engine & Power Transmission Equipment	95,095	0.00073734	311	0.00053423	0.72
3116	Animal Slaughtering and Processing	501,145	0.00388572	1,637	0.00281145	0.72
3212	Veneer, Plywood & Engineered Wood Products	117,555	0.00091148	375	0.00064360	0.71
3219	Other Wood Products	309,821	0.00240226	976	0.00167599	0.70
3252	Resin, Synthetic Rubber & Synthetic Fibers	109,021	0.00084531	328	0.00056286	0.67
3149	Other Textile Products	73,047	0.00056638	217	0.00037276	0.66
3372	Other Furniture	132,124	0.00102445	301	0.00051648	0.50
3391	Medical Equipment and Supplies	299,728	0.00232400	623	0.00107018	0.46
3121	Beverages	161,099	0.00124911	s	s	s
3313	Aluminum Production and Processing	73,000	0.00056602	s	s	s
3334	HVAC & Commercial Refrigeration Equipment	151,895	0.00117775	s	s	s
3366	Ship and Boat Building	178,499	0.00138402	s	s	s
3364	Aerospace Products and Parts	448,674	0.00347887	428	0.00073579	0.21
3344	Semiconductor & Other Electronic Components	449,165	0.00348268	364	0.00062528	0.18
3379	Other Furniture Related Products	52,040	0.00040350	37	0.00006413	0.16
3345	Navigation, Electromedical & Control Instruments	431,771	0.00334782	269	0.00046151	0.14
3341	Computer and Peripheral Equipment	203,775	0.00158001	s	s	s
3161	Leather and Hide Tanning	6,954	0.00005392	s	s	s
3342	Communications Equipment	144,994	0.00112424	59	0.00010192	0.09
3159	Apparel Accessories	21,414	0.00016604	s	s	s
3141	Textile Furnishing Mills	98,349	0.00076257	36	0.00006184	0.08
3152	Cut and Sew Apparel	202,747	0.00157204	67	0.00011452	0.07
3211	Sawmills and Wood Preservation	117,990	0.00091486	23	0.00003951	0.04
3254	Pharmaceuticals and Medicines	285,969	0.00221731	s	s	s
3221	Pulp, Paper, and Paperboard Mills	142,698	0.00110643	s	s	s
3132	Fabric Mills	110,333	0.00085548	13	0.00002176	0.03
3346	Magnetic and Optical Media Reproduction	44,497	0.00034501	s	s	s
3117	Seafood Product Preparation	40,996	0.00031787	0	0.00000000	0.00
3122	Tobacco Products	25,973	0.00020139	0	0.00000000	0.00
3131	Fiber, Yarn, and Thread Mills	51,971	0.00040296	0	0.00000000	0.00
3151	Apparel Knitting Mills	38,447	0.00029810	0	0.00000000	0.00
3162	Footwear Products	18,370	0.00014244	0	0.00000000	0.00
3343	Audio and Video Equipment	32,749	0.00025393	0	0.00000000	0.00
3365	Railroad Rolling Stock	26,518	0.00020561	0	0.00000000	0.00

An “s” indicates data is suppressed to avoid disclosing information about individual companies.
Data Source: Quarterly Census of Employment and Wages (ES202)

Prepared by: Center for Economic Development, Maxine Goodman Levin College of Urban Affairs, Cleveland State University

Table A-4. Northwest Ohio Manufacturing Wage Trends, 2000-2005

NAICS	Description	Wages		Change	Percent Change
		2000	2005		
3111	Animal Food Products	$28,335	$46,810	$18,475	65.2%
3112	Grain and Oilseed Milling	$60,977	$50,924	-$10,054	-16.5%
3113	Sugar and Confectionery Products	$30,692	$27,548	-$3,144	-10.2%
3114	Fruit and Vegetable Preserving	$42,861	$43,655	$794	1.9%
3115	Dairy Products	$40,571	$48,422	$7,852	19.4%
3116	Animal Slaughtering and Processing	$27,689	$29,186	$1,497	5.4%
3118	Bakeries and Tortillas	$26,674	$26,186	-$489	-1.8%
3119	Other Food Manufacturing	$31,943	$29,066	-$2,876	-9.0%
3121	Beverages	$41,823	s	s	s
3132	Fabric Mills	s	$17,540	s	s
3133	Textile and Fabric Finishing	$41,933	$45,970	$4,037	9.6%
3141	Textile Furnishings Mills	$16,282	$14,898	-$1,384	-8.5%
3149	Other Textile Products	$30,251	$21,389	-$8,862	-29.3%
3152	Cut and Sew Apparel	$18,971	$22,043	$3,072	16.2%
3159	Apparel Accessories	s	s	s	s
3161	Leather and Hide Tanning	s	s	s	s
3169	Other Leather and Allied Products	s	s	s	s
3211	Sawmills and Wood Preservation	$23,333	$24,598	$1,265	5.4%
3212	Veneer, Plywood & Engineered Wood Products	$24,539	$26,279	$1,740	7.1%
3219	Other Wood Products	$26,955	$27,248	$293	1.1%
3221	Pulp, Paper, and Paperboard Mills	----	s	s	**s**
3222	Converted Paper Products	$40,491	$36,210	-$4,280	-10.6%
3231	Printing and Related Support Activities	$33,722	$32,437	-$1,285	-3.8%
3241	Petroleum and Coal Products	$78,714	$95,291	$16,577	21.1%
3251	Basic Chemicals	$67,174	$85,112	$17,939	26.7%
3252	Resin, Synthetic Rubber & Synthetic Fibers	$53,425	$57,962	$4,537	8.5%
3253	Pesticide, Fertilizer & Agricultural Chemicals	s	s	s	s
3254	Pharmaceuticals and Medicines	$119,817	s	s	s
3255	Paints, Coatings, and Adhesives	$64,281	$50,324	-$13,957	-21.7%
3256	Soap, Cleaners & Toilet Preparations	$53,326	$56,767	$3,441	6.5%
3259	Other Chemical Product and Preparations	$45,616	$39,489	-$6,128	-13.4%
3261	Plastic Products	$33,601	$36,795	$3,194	9.5%
3262	Rubber Products	$49,686	$49,200	-$486	-1.0%
3271	Clay Products and Refractory	$44,969	$35,632	-$9,337	-20.8%
3272	Glass and Glass Products	$55,351	$69,518	$14,167	25.6%
3273	Cement and Concrete Products	$39,902	$37,483	-$2,419	-6.1%
3274	Lime and Gypsum Products	$50,293	$53,457	$3,163	6.3%
3279	Other Nonmetallic Mineral Products	$115,680	$139,055	$23,375	20.2%
3311	Iron and Steel Mills	s	$59,121	s	s
3312	Steel Products from Purchased Steel	$47,131	$46,151	-$980	-2.1%
3313	Aluminum Production and Processing	s	s	s	s
3314	Nonferrous Metal (except Aluminum) Production	$59,862	$62,317	$2,454	4.1%
3315	Foundries	$70,739	$69,386	-$1,354	-1.9%

Table A-4. Northwest Ohio Manufacturing Wage Trends, 2000-2005 (continued)

NAICS	Description	Wages		Change	Percent Change
		2000	2005		
3321	Forging and Stamping	$42,347	$42,010	-$337	-0.8%
3322	Cutlery and Handtools	$36,630	$36,542	-$88	-0.2%
3323	Architectural and Structural Metals	$37,033	$33,562	-$3,471	-9.4%
3324	Boiler, Tanks, and Shipping Containers	$50,719	$56,777	$6,058	11.9%
3325	Hardware Manufacturing	s	s	s	s
3326	Spring and Wire Products	$38,512	$38,263	-$249	-0.6%
3327	Machine Shops and Turned Products	$38,943	$35,990	-$2,953	-7.6%
3328	Coating, Engraving, and Heat Treating	$38,412	$45,803	$7,390	19.2%
3329	Other Fabricated Metal Products	$58,643	$47,872	-$10,771	-18.4%
3331	Agriculture, Construction & Mining Machinery	$37,494	$35,222	-$2,272	-6.1%
3332	Industrial Machinery	$43,978	$50,635	$6,656	15.1%
3333	Commercial and Service Industry Machinery	$39,326	$40,291	$965	2.5%
3334	HVAC & Commercial Refrigeration Equipment	s	s	s	s
3335	Metalworking Machinery	$47,911	$42,687	-$5,224	-10.9%
3336	Engine & Power Transmission Equipment	$54,088	$42,201	-$11,886	-22.0%
3339	Other General Purpose Machinery	$43,901	$43,564	-$337	-0.8%
3341	Computer and Peripheral Equipment	s	s	s	s
3342	Communications Equipment	$27,819	$32,303	$4,485	16.1%
3343	Audio and Video Equipment	$14,710	$0	-$14,710	-100.0%
3344	Semiconductor & Other Electronic Components	$47,304	$51,226	$3,922	8.3%
3345	Navigation, Electromedical & Control Instruments	$31,765	$32,278	$513	1.6%
3346	Magnetic and Optical Media Reproduction	s	s	s	s
3351	Electric Lighting Equipment	s	$22,875	s	s
3352	Household Appliances	$45,540	$38,128	-$7,412	-16.3%
3353	Electrical Equipment	$43,534	$55,633	$12,100	27.8%
3359	Other Electrical Equipment and Components	$37,586	$37,585	-$2	0.0%
3361	Motor Vehicles	s	s	s	s
3362	Motor Vehicle Bodies & Trailers	$31,225	$35,284	$4,059	13.0%
3363	Motor Vehicle Parts	$62,935	$50,834	-$12,102	-19.2%
3364	Aerospace Products and Parts	$58,238	$52,936	-$5,302	-9.1%
3366	Ship and Boat Building	s	s	s	s
3369	Other Transportation Equipment	s	s	s	s
3371	Household Furniture and Kitchen Cabinets	$35,651	$37,378	$1,728	4.8%
3372	Office Furniture	$34,988	$29,771	-$5,217	-14.9%
3379	Other Furniture Related Products	$24,181	$26,275	$2,094	8.7%
3391	Medical Equipment and Supplies	$35,274	$36,334	$1,060	3.0%
3399	Other Miscellaneous Manufacturing	$34,277	$34,614	$336	1.0%

All 2000 wages have been inflated to 2005 levels.
An “s” indicates data is suppressed to avoid disclosing information about individual companies.
Data Source: Quarterly Census of Employment and Wages (ES202)
Prepared by: Center for Economic Development, Maxine Goodman Levin College of Urban Affairs, Cleveland State University

Table A-5. Employment Trends: Northwest Ohio vs. United States, 2000-2005

NAICS	Description	Northwest Ohio Employment			United States Employment		
		2000	2005	% Change	2000	2005	Percent Change
3111	Animal Food Products	521	536	2.8%	54,004	48,195	-10.8%
3112	Grain and Oilseed Milling	869	504	-42.0%	64,775	60,243	-7.0%
3113	Sugar and Confectionery Products	523	532	1.7%	91,795	76,133	-17.1%
3114	Fruit and Vegetable Preserving	3,089	2,513	-18.6%	186,382	162,088	-13.0%
3115	Dairy Products	1,274	1,079	-15.3%	132,524	129,515	-2.3%
3116	Animal Slaughtering and Processing	1,396	1,637	17.2%	503,015	501,145	-0.4%
3117	Seafood Product Preparation	-----	-----	-----	43,938	40,996	-6.7%
3118	Bakeries and Tortillas	2,268	2,477	9.2%	300,299	277,606	-7.6%
3119	Other Food Manufacturing	1,036	1,017	-1.8%	150,620	157,929	4.9%
3121	Beverages	342	s	s	169,535	161,099	-5.0%
3122	Tobacco Products	-----	-----	-----	33,842	25,973	-23.3%
3131	Fiber, Yarn, and Thread Mills	-----	-----	-----	81,163	51,971	-36.0%
3132	Fabric Mills	s	13	s	192,063	110,333	-42.6%
3133	Textile and Fabric Finishing	861	576	-33.1%	109,344	64,400	-41.1%
3141	Textile Furnishings Mills	44	36	-18.2%	129,816	98,349	-24.2%
3149	Other Textile Products	187	217	16.0%	87,395	73,047	-16.4%
3151	Apparel Knitting Mills	-----	-----	-----	72,364	38,447	-46.9%
3152	Cut and Sew Apparel	135	67	-50.7%	408,950	202,747	-50.4%
3159	Apparel Accessories	s	s	s	35,125	21,414	-39.0%
3161	Leather and Hide Tanning	s	s	s	12,223	6,954	-43.1%
3162	Footwear products	-----	-----	-----	31,368	18,370	-41.4%
3169	Other Leather and Allied Products	s	s	s	27,369	14,719	-46.2%
3211	Sawmills and Wood Preservation	37	23	-37.8%	136,592	117,990	-13.6%
3212	Veneer, Plywood & Engineered Wood	187	375	100.0%	121,107	117,555	-2.9%
3219	Other Wood Products	1,100	976	-11.3%	355,599	309,821	-12.9%
3221	Pulp, Paper, and Paperboard Mills	----	s	s	191,377	142,698	-25.4%
3222	Converted Paper Products	2,372	2,153	-9.2%	417,893	345,131	-17.4%
3231	Printing and Related Support Activities	3,742	3,469	-7.3%	815,609	648,945	-20.4%
3241	Petroleum and Coal Products	2,032	1,784	-12.2%	121,770	108,806	-10.6%
3251	Basic Chemicals	873	836	-4.2%	189,477	151,723	-19.9%
3252	Resin, Synthetic & Rubber Fibers	386	328	-15.0%	137,050	109,021	-20.5%
3253	Agricultural Chemicals	s	s	s	48,855	40,605	-16.9%
3254	Pharmaceuticals and Medicines	26	s	s	269,803	285,969	6.0%
3255	Paints, Coatings, and Adhesives	518	480	-7.3%	77,967	67,378	-13.6%
3256	Soap, Cleaners & Toilet Preparations	1,265	1,450	14.6%	132,827	113,911	-14.2%
3259	Other Chemical Products	1,095	1,063	-3.0%	127,842	105,424	-17.5%
3261	Plastic Products	10,097	8,599	-14.8%	744,021	629,357	-15.4%
3262	Rubber Products	7,688	7,071	-8.0%	214,898	169,169	-21.3%
3271	Clay Products and Refractory	349	234	-33.0%	81,945	62,317	-24.0%
3272	Glass and Glass Products	4,260	3,675	-13.7%	141,988	107,741	-24.1%
3273	Cement and Concrete Products	895	954	6.6%	224,329	221,402	-1.3%
3274	Lime and Gypsum Products	925	630	-31.9%	20,842	19,117	-8.3%
3279	Other Nonmetallic Mineral Products	2,895	2,691	-7.0%	74,331	73,804	-0.7%

Table A-5. Employment Trends: Northwest Ohio vs. United States, 2000-2005 (continued)

NAICS	Description	Northwest Ohio Employment			United States Employment		
		2000	2005	% Change	2000	2005	Percent Change
3311	Iron and Steel Mills	S	490	s	135,784	94,809	-30.2%
3312	Steel Products from Purchased Steel	1,331	937	-29.6%	73,548	59,845	-18.6%
3313	Aluminum Production and Processing	S	s	s	100,726	73,000	-27.5%
3314	Nonferrous Metal Production	1,168	1,001	-14.3%	97,478	72,053	-26.1%
3315	Foundries	4,785	3,548	-25.9%	218,840	166,277	-24.0%
3321	Forging and Stamping	980	869	-11.3%	136,269	109,852	-19.4%
3322	Cutlery and Handtools	733	510	-30.4%	79,081	56,128	-29.0%
3323	Architectural and Structural Metals	3,166	2,526	-20.2%	443,682	387,044	-12.8%
3324	Boiler, Tanks, and Shipping Containers	1,557	1,337	-14.1%	106,844	90,497	-15.3%
3325	Hardware Manufacturing	S	s	s	50,737	36,599	-27.9%
3326	Spring and Wire Products	562	587	4.5%	81,310	60,008	-26.2%
3327	Machine Shops and Turned Products	2,917	2,665	-8.6%	361,911	336,437	-7.0%
3328	Coating, Engraving, and Heat Treating	2,733	2,157	-21.1%	174,909	144,503	-17.4%
3329	Other Fabricated Metal Products	5,549	4,343	-21.7%	344,641	283,386	-17.8%
3331	Construction & Mining Machinery	650	718	10.5%	222,194	202,160	-9.0%
3332	Industrial Machinery	2,311	1,662	-28.1%	160,059	122,543	-23.4%
3333	Service Industry Machinery	661	472	-28.5%	148,980	111,608	-25.1%
3334	HVAC & Refrigeration Equipment	S	s	s	191,393	151,895	-20.6%
3335	Metalworking Machinery	5,057	4,135	-18.2%	276,175	199,980	-27.6%
3336	Power Transmission Equipment	560	311	-44.5%	114,693	95,095	-17.1%
3339	Other General Purpose Machinery	5,192	4,382	-15.6%	343,583	264,605	-23.0%
3341	Computer and Peripheral Equipment	S	s	s	287,150	203,775	-29.0%
3342	Communications Equipment	33	59	79.8%	240,542	144,994	-39.7%
3343	Audio and Video Equipment	9	0	-100.0%	51,634	32,749	-36.6%
3344	Electronic Components	2,910	364	-87.5%	646,276	449,165	-30.5%
3345	Navigation & Control Instruments	321	269	-16.3%	476,903	431,771	-9.5%
3346	Magnetic & Optical Media Reproduction	S	s	s	64,629	44,497	-31.2%
3351	Electric Lighting Equipment	S	425	s	85,350	62,102	-27.2%
3352	Household Appliances	6,197	5,139	-17.1%	109,787	87,556	-20.2%
3353	Electrical Equipment	640	556	-13.1%	210,319	152,226	-27.6%
3359	Other Electrical Equipment	1,323	1,201	-9.2%	183,429	136,233	-25.7%
3361	Motor Vehicles	S	s	s	291,474	251,619	-13.7%
3362	Motor Vehicle Bodies & Trailers	1,720	2,017	17.3%	192,378	166,864	-13.3%
3363	Motor Vehicle Parts	30,989	23,956	-22.7%	843,812	689,831	-18.2%
3364	Aerospace Products and Parts	514	428	-16.6%	522,003	448,674	-14.0%
3365	Railroad Rolling Stock	-----	-----	-----	33,956	26,518	-21.9%
3366	Ship and Boat Building	S	s	s	179,155	178,499	-0.4%
3369	Other Transportation Equipment	S	s	s	41,598	38,750	-6.8%
3371	Household Furniture & Kitchen Cabinets	4,567	3,663	-19.8%	444,381	379,398	-14.6%
3372	Office Furniture	383	301	-21.5%	182,500	132,124	-27.6%
3379	Other Furniture Related Products	65	37	-42.9%	57,564	52,040	-9.6%
3391	Medical Equipment and Supplies	752	623	-17.2%	310,280	299,728	-3.4%
3399	Other Miscellaneous Manufacturing	2,855	2,049	-28.2%	429,024	345,379	-19.5%

An “s” indicates data is suppressed to avoid disclosing information about individual companies.
Data Source: Quarterly Census of Employment and Wages (ES202)
Prepared by: Center for Economic Development, Maxine Goodman Levin College of Urban Affairs, Cleveland State University

Table A-6. Payroll Trends: Northwest Ohio vs. United States, 2000-2005

NAICS	Description	Northwest Ohio Payroll			United States Payroll		
		2000	2005	% Change	2000	2005	Percent Change
3111	Animal Food Products	$3,733,575	$6,268,653	67.9%	$606,113,339	$542,279,273	-10.5%
3112	Grain and Oilseed Milling	$13,396,520	$6,416,396	-52.1%	$846,777,548	$835,145,091	-1.4%
3113	Sugar and Confectionery Products	$4,059,684	$3,661,539	-9.8%	$853,493,494	$721,764,611	-15.4%
3114	Fruit and Vegetable Preserving	$33,484,728	$27,429,602	-18.1%	$1,634,405,854	$1,465,227,298	-10.4%
3115	Dairy Products	$13,072,233	$13,057,842	-0.1%	$1,535,312,750	$1,436,586,452	-6.4%
3116	Animal Slaughtering and Processing	$9,775,865	$11,941,820	22.2%	$3,504,522,277	$3,349,785,456	-4.4%
3117	Seafood Product Preparation	-----	-----	-----	$315,591,310	$314,003,946	-0.5%
3118	Bakeries and Tortillas	$15,298,353	$16,217,630	6.0%	$2,343,192,424	$2,077,021,184	-11.4%
3119	Other Food Manufacturing	$8,372,189	$7,392,476	-11.7%	$1,967,499,064	$1,840,195,738	-6.5%
3121	Beverages	$3,613,994	s	s	$2,010,443,239	$1,916,982,183	-4.6%
3122	Tobacco Products	-----	-----	-----	$561,912,234	$531,676,419	-5.4%
3131	Fiber, Yarn, and Thread Mills	-----	-----	-----	$595,089,330	$388,044,379	-34.8%
3132	Fabric Mills	s	$55,543	s	$1,619,313,210	$984,383,563	-39.2%
3133	Textile and Fabric Finishing	$9,134,836	$6,619,718	-27.5%	$926,134,674	$552,641,379	-40.3%
3141	Textile Furnishings Mills	$181,190	$134,080	-26.0%	$928,225,609	$724,366,358	-22.0%
3149	Other Textile Products	$1,430,703	$1,160,350	-18.9%	$615,523,329	$501,723,082	-18.5%
3151	Apparel Knitting Mills	-----	-----	-----	$476,921,182	$265,188,011	-44.4%
3152	Cut and Sew Apparel	$649,344	$367,383	-43.4%	$2,402,937,592	$1,405,310,034	-41.5%
3159	Apparel Accessories	s	s	s	$221,882,356	$152,785,195	-31.1%
3161	Leather and Hide Tanning	s	s	s	$118,659,669	$64,679,760	-45.5%
3162	Footwear products	-----	-----	-----	$254,230,527	$155,756,865	-38.7%
3169	Other Leather and Allied Products	s	s	s	$188,201,295	$98,488,598	-47.7%
3211	Sawmills and Wood Preservation	$218,344	$141,438	-35.2%	$1,158,379,623	$994,015,498	-14.2%
3212	Veneer, Plywood & Engineered Wood	$1,162,611	$2,461,424	111.7%	$1,086,563,697	$1,035,152,843	-4.7%
3219	Other Wood Products	$7,501,120	$6,646,239	-11.4%	$2,653,363,844	$2,351,243,599	-11.4%
3221	Pulp, Paper, and Paperboard Mills	-----	s	s	$3,109,512,999	$2,350,798,507	-24.4%
3222	Converted Paper Products	$24,290,631	$19,493,129	-19.8%	$4,742,638,804	$3,909,837,522	-17.6%
3231	Printing and Related Support Activities	$31,911,275	$28,130,722	-11.8%	$8,182,471,957	$6,375,195,839	-22.1%

Table A-6. Payroll Trends: Northwest Ohio vs. United States, 2000-2005 (continued)

NAICS	Description	Northwest Ohio Payroll			United States Payroll		
		2000	2005	% Change	2000	2005	Percent Change
3241	Petroleum and Coal Products	$40,452,430	$42,507,513	5.1%	$2,247,671,042	$2,516,565,357	12.0%
3251	Basic Chemicals	$14,825,742	$17,795,543	20.0%	$3,701,228,202	$3,244,300,578	-12.3%
3252	Resin, Synthetic & Rubber Fibers	$5,211,064	$4,748,079	-8.9%	$2,291,786,888	$1,916,512,690	-16.4%
3253	Agricultural Chemicals	s	s	s	$761,726,604	$654,177,406	-14.1%
3254	Pharmaceuticals and Medicines	$787,884	s	s	$6,489,239,705	$6,757,989,659	4.1%
3255	Paints, Coatings, and Adhesives	$8,421,384	$6,043,093	-28.2%	$1,109,352,828	$973,261,783	-12.3%
3256	Soap, Cleaners & Toilet Preparations	$17,056,363	$20,573,454	20.6%	$1,661,435,874	$1,510,829,275	-9.1%
3259	Other Chemical Products	$12,636,736	$10,490,786	-17.0%	$1,887,561,468	$1,445,859,683	-23.4%
3261	Plastic Products	$85,803,572	$79,104,115	-7.8%	$6,924,452,159	$5,850,960,837	-15.5%
3262	Rubber Products	$96,612,215	$86,976,649	-10.0%	$2,396,845,229	$1,865,718,708	-22.2%
3271	Clay Products and Refractory	$3,969,222	$2,081,493	-47.6%	$807,133,122	$622,066,108	-22.9%
3272	Glass and Glass Products	$59,635,686	$63,869,591	7.1%	$1,683,263,654	$1,229,938,919	-26.9%
3273	Cement and Concrete Products	$9,035,372	$8,942,758	-1.0%	$2,288,124,197	$2,219,632,229	-3.0%
3274	Lime and Gypsum Products	$11,770,061	$8,419,444	-28.5%	$266,600,379	$234,451,880	-12.1%
3279	Other Nonmetallic Mineral Products	$84,689,284	$93,549,566	10.5%	$851,858,059	$832,306,478	-2.3%
3311	Iron and Steel Mills	s	$7,242,292	s	$2,140,609,150	$1,642,190,209	-23.3%
3312	Steel Products from Purchased Steel	$15,861,462	$10,814,738	-31.8%	$886,037,681	$790,325,063	-10.8%
3313	Aluminum Production and Processing	s	s	s	$1,463,124,282	$922,390,690	-37.0%
3314	Nonferrous Metal Production	$17,683,395	$15,594,759	-11.8%	$1,288,666,986	$934,218,580	-27.5%
3315	Foundries	$85,607,630	$61,545,188	-28.1%	$2,424,308,962	$1,814,155,076	-25.2%
3321	Forging and Stamping	$10,492,296	$9,123,096	-13.0%	$1,477,661,026	$1,185,072,035	-19.8%
3322	Cutlery and Handtools	$6,793,762	$4,662,180	-31.4%	$864,147,414	$660,978,337	-23.5%
3323	Architectural and Structural Metals	$29,655,997	$21,197,022	-28.5%	$4,115,428,178	$3,575,270,105	-13.1%
3324	Boiler, Tanks, and Shipping Containers	$19,968,060	$18,972,941	-5.0%	$1,248,156,377	$1,064,869,626	-14.7%
3325	Hardware Manufacturing	s	s	s	$484,853,522	$379,159,625	-21.8%
3326	Spring and Wire Products	$5,474,020	$5,618,313	2.6%	$740,609,068	$555,476,949	-25.0%
3327	Machine Shops and Turned Products	$28,729,813	$23,978,279	-16.5%	$3,665,207,690	$3,258,212,765	-11.1%
3328	Coating, Engraving, and Heat Treating	$26,554,113	$24,702,928	-7.0%	$1,573,642,025	$1,276,476,715	-18.9%

Table A-6. Payroll Trends: Northwest Ohio vs. United States, 2000-2005 (continued)

NAICS	Description	Northwest Ohio Payroll			United States Payroll		
		2000	2005	% Change	2000	2005	Percent Change
3329	Other Fabricated Metal Products	$82,300,188	$51,976,604	-36.8%	$3,885,903,026	$3,282,795,922	-15.5%
3331	Construction & Mining Machinery	$6,163,706	$6,325,316	2.6%	$2,760,427,227	$2,851,123,167	3.3%
3332	Industrial Machinery	$25,708,021	$21,034,440	-18.2%	$2,489,506,637	$1,752,819,258	-29.6%
3333	Service Industry Machinery	$6,574,263	$4,757,673	-27.6%	$2,105,505,419	$1,642,366,959	-22.0%
3334	HVAC & Refrigeration Equipment	s	s	s	$1,984,608,954	$1,550,551,595	-21.9%
3335	Metalworking Machinery	$61,277,236	$44,127,451	-28.0%	$3,365,165,288	$2,255,917,459	-33.0%
3336	Power Transmission Equipment	$7,660,465	$3,281,155	-57.2%	$1,671,328,815	$1,523,559,569	-8.8%
3339	Other General Purpose Machinery	$57,651,045	$47,728,506	-17.2%	$4,267,568,866	$3,340,642,784	-21.7%
3341	Computer and Peripheral Equipment	s	s	s	$9,469,982,927	$5,377,477,557	-43.2%
3342	Communications Equipment	$232,178	$479,168	106.4%	$4,951,272,025	$2,740,691,398	-44.6%
3343	Audio and Video Equipment	$32,243	$0	-100.0%	$611,771,137	$414,934,403	-32.2%
3344	Electronic Components	$34,818,437	$4,661,585	-86.6%	$13,552,808,836	$8,167,055,003	-39.7%
3345	Navigation & Control Instruments	$2,578,847	$2,167,994	-15.9%	$8,608,492,038	$8,022,274,916	-6.8%
3346	Magnetic & Optical Media Reproduction	s	s	s	$1,163,573,644	$759,613,051	-34.7%
3351	Electric Lighting Equipment	s	$2,432,337	s	$870,989,043	$683,518,251	-21.5%
3352	Household Appliances	$71,371,065	$48,987,864	-31.4%	$1,191,154,055	$937,213,460	-21.3%
3353	Electrical Equipment	$7,042,866	$7,728,418	9.7%	$2,465,756,447	$1,921,285,850	-22.1%
3359	Other Electrical Equipment	$12,579,659	$11,287,917	-10.3%	$2,238,810,590	$1,562,871,575	-30.2%
3361	Motor Vehicles	s	s	s	$6,297,264,113	$4,475,594,472	-28.9%
3362	Motor Vehicle Bodies & Trailers	$13,583,009	$17,794,966	31.0%	$1,929,838,135	$1,517,282,137	-21.4%
3363	Motor Vehicle Parts	$493,260,950	$304,443,937	-38.3%	$11,940,438,894	$8,603,951,793	-27.9%
3364	Aerospace Products and Parts	$7,565,800	$5,668,532	-25.1%	$8,500,464,385	$8,131,860,434	-4.3%
3365	Railroad Rolling Stock	-----	-----	-----	$392,797,733	$300,721,885	-23.4%
3366	Ship and Boat Building	s	s	s	$1,971,385,893	$2,007,469,291	1.8%
3369	Other Transportation Equipment	s	s	s	$582,080,884	$515,857,170	-11.4%
3371	Household Furniture & Kitchen Cabinets	$41,175,122	$34,232,140	-16.9%	$3,196,565,011	$2,747,243,018	-14.1%
3372	Office Furniture	$3,389,104	$2,237,787	-34.0%	$1,733,558,434	$1,188,526,497	-31.4%
3379	Other Furniture Related Products	$399,555	$245,234	-38.6%	$474,325,066	$455,314,314	-4.0%
3391	Medical Equipment and Supplies	$6,711,710	$5,659,039	-15.7%	$3,866,062,074	$3,957,624,238	2.4%
3399	Other Miscellaneous Manufacturing	$24,747,546	$17,733,779	-28.3%	$3,919,472,466	$3,228,490,264	-17.6%

An “s” indicates data is suppressed to avoid disclosing information about individual companies.
All 2000 wages have been inflated to 2005 levels.

Table A-7. Lucas County Employment Trends, 2000-2005

NAICS	Description	2000 Employment	2005 Employment	Change	Percent Change
311	Food Manufacturing	1,488	933	-555	-37%
312	Beverage and Tobacco Product Manufacturing	s	-----	s	s
313	Textile Mills	s	s	s	s
314	Textile Product Mills	52	54	2	4%
315	Apparel Manufacturing	s	s	s	s
316	Leather and Allied Product Manufacturing	s	-----	s	s
321	Wood Product Manufacturing	27	156	129	485%
322	Paper Manufacturing	361	357	-4	-1%
323	Printing and Related Support Activities	1,801	1,377	-423	-24%
324	Petroleum and Coal Products Manufacturing	1,172	957	-214	-18%
325	Chemical Manufacturing	1,791	1,590	-201	-11%
326	Plastics and Rubber Products Manufacturing	870	713	-157	-18%
327	Nonmetallic Mineral Product Manufacturing	4,341	3,951	-390	-9%
331	Primary Metal Manufacturing	727	604	-123	-17%
332	Fabricated Metal Product Manufacturing	3,533	2,676	-857	-24%
333	Machinery Manufacturing	2,145	1,742	-403	-19%
334	Computer and Electronic Product Manufacturing	274	152	-122	-44%
335	Electrical Equipment, Appliance, and Component Manufacturing	689	629	-59	-9%
336	Transportation Equipment Manufacturing	13,436	9,731	-3705	-28%
337	Furniture and Related Product Manufacturing	392	267	-125	-32%
339	Miscellaneous Manufacturing	804	555	-249	-31%

An “s” indicates data is suppressed to avoid disclosing information about individual companies. Data is presented at the three-digit NAICS level due the large number of industries for which data must be suppressed at the four-digit level.
Data Source: Quarterly Census of Employment and Wages (ES202)
Prepared by: Center for Economic Development, Maxine Goodman Levin College of Urban Affairs, Cleveland State University

Table A-8. Lucas County Wage Trends, 2000-2005

NAICS	Description	2000 Wages	2005 Wages	Change	Percent Change
311	Food Manufacturing	$45,001	$37,214	-$7,787	-17%
312	Beverage and Tobacco Product Manufacturing	s	-----	s	s
313	Textile Mills	s	s	s	s
314	Textile Product Mills	$19,636	$20,853	$1,217	6%
315	Apparel Manufacturing	s	s	s	s
316	Leather and Allied Product Manufacturing	s	-----	s	s
321	Wood Product Manufacturing	$32,462	$37,813	$5,351	16%
322	Paper Manufacturing	$47,901	$38,739	-$9,162	-19%
323	Printing and Related Support Activities	$35,928	$34,592	-$1,337	-4%
324	Petroleum and Coal Products Manufacturing	$78,034	$103,470	$25,436	33%
325	Chemical Manufacturing	$52,792	$60,855	$8,063	15%
326	Plastics and Rubber Products Manufacturing	$38,366	$39,449	$1,082	3%
327	Nonmetallic Mineral Product Manufacturing	$99,370	$126,934	$27,565	28%
331	Primary Metal Manufacturing	$42,906	$47,571	$4,666	11%
332	Fabricated Metal Product Manufacturing	$42,839	$39,668	-$3,171	-7%
333	Machinery Manufacturing	$47,218	$47,268	$50	0%
334	Computer and Electronic Product Manufacturing	$39,644	$42,812	$3,167	8%
335	Electrical Equipment, Appliance, and Component Manufacturing	$48,550	$63,543	$14,993	31%
336	Transportation Equipment Manufacturing	$89,387	$61,667	-$27,721	-31%
337	Furniture and Related Product Manufacturing	$32,510	$30,190	-$2,320	-7%
339	Miscellaneous Manufacturing	$35,461	$34,507	-$954	-3%

An “s” indicates data is suppressed to avoid disclosing information about individual companies. Data is presented at the three-digit NAICS level due the large number of industries for which data must be suppressed at the four-digit level.
All 2000 wage values have been inflated to 2005 levels.
Data Source: Quarterly Census of Employment and Wages (ES202)
Prepared by: Center for Economic Development, Maxine Goodman Levin College of Urban Affairs, Cleveland State University